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REGULATIONS OF THE PERMANENT COMMITTEE

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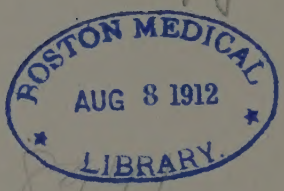

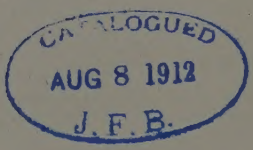

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*Paterson, John Sherman, *Actuary*,
Insurance Department of New York.....Albany, N. Y.
*Peiler, Maximilian Heinrich, *Assistant Actuary*,
Aetna Life Insurance Company.....Hartford, Conn.
*Pierson, Israel Coriell, Ph.D., A.I.A.,
President, Actuarial Society of America. *Actuary*, Washington Life Insurance Company.....New York, N. Y.
*Reiter, Charles Grant, *Assistant Actuary*,
Metropolitan Life Insurance Company.....New York, N. Y.
*Rhodes, Edward E., *Assistant Mathematician*,
Mutual Benefit Life Insurance Company.....Newark, N. J.
*Robertson, Hugh Wilfred,
Equitable Life Assurance Society of the United States.....New York, N. Y.

*Roche, John Francis, *Actuary*,
Pacific Mutual Life Insurance Company.....New York, N. Y.
*Rose, Douglas Hall, *Actuary*,
Maryland Life Insurance Company.....Baltimore, Md.
Salter, George Ferry,
123 N. 16th St.....East Orange, N. J.
Sanders, George White, A.B., *Actuary*,
Michigan Mutual Life Insurance Company.....Detroit, Mich.
Sartelle, Edward James, *Actuary*,
State Mutual Life Assurance Company.....Worcester, Mass.
*Sheppard, Herbert Norman, A.B., A.I.A., *Assistant Actuary*,
Home Life Insurance Company.....New York, N. Y.
Smith, William Simeon, A.M., *Actuary*,
John Hancock Life Insurance Company.....Boston, Mass.
*Stabler, Edward Lincoln, Ph.D.,
26 Ferry St.....New York, N. Y.
*Standen, William Thomas, *Actuary*,
United States Life Insurance Company.....New York, N. Y.
*Stanley, Walter Newell,
Manhattan Life Insurance Company.....New York, N. Y.
*St. John, Howell Williams, Ph.B., *Actuary*,
Aetna Life Insurance Company.....Hartford, Conn.
*Stilwell, Samuel Edgar, Ph.D., *Actuary*,
Insurance Department of Ohio.....Columbus, O.
*Strong, Wendell Melville, Ph.D., LL.B., *Assistant Actuary*,
Mutual Life Insurance Company of New York.....New York, N. Y.
*Tatlock, John, M.A., F.R.A.S., *Associate Actuary*,
Mutual Life Insurance Company of New York.....New York, N. Y.
*Torrey, Morris Whitmore, *Actuary*,
Manhattan Life Insurance Company.....New York, N. Y.
*Van Cise, Joel Garretson, *Actuary*,
Equitable Life Assurance Society of the United States.....New York, N. Y.
*Washburn, James Herman,
Metropolitan Life Insurance Company.....New York, N. Y.
*Washburne, Alva Courtenay,
Metropolitan Life Insurance Company.....New York, N. Y.
*Weeks, Rufus Wells, A.I.A., Vice President
Actuarial Society of America; *Actuary and Second Vice President*, New York Life Insurance Company.....New York, N. Y.
*Welch, Archibald Ashley, A.B., *Actuary*,
Phoenix Mutual Life Insurance Company.....Hartford, Conn.
*Wells, Daniel Halsey, Ph.B., Second Vice President
Actuarial Society of America; *Actuary*, Connecticut Mutual
Life Insurance Company.....Hartford, Conn.
*Wills, Frank J., *Actuary*,
Columbian National Life Insurance Company.....Boston, Mass.
Wing, Asa Shove, *Vice President*,
Provident Life & Trust Company.....Philadelphia, Penn.
*Woodward, George Badger, *Third Vice President*,
Metropolitan Life Insurance Company.....New York, N. Y.
Wright, Hon. Carroll D., LL.D., *Commissioner of Labor*,
Department of Commerce and Labor.....Washington, D. C.
Wright, Peter Troth, A.M., *Assistant Actuary*,
Penn Mutual Life Insurance Company.....Philadelphia, Penn.
*Wright, Walter Channing, *Consulting Actuary*,
45 Milk St.....Boston, Mass.

SUBSCRIBING ADHERENTS.

AUSTRALIA.

OWEN, E. F.,
Office of Actuary for Friendly Societies.....Melbourne.

AUSTRIA.

"Allianz" Lebens und Renten Versicherungs Aktien Gesellschaft in Wien....Wien.
Bibliothek der K. K. Technischen Hochschule.....Wien.
Gisela Verein.....Wien.
Oesterreichischer und Ungarischer Verband der Privat Versicherungs Anstalten. Wien
RIEMER,
Director. 10 Herrengasse.....Prag.

BELGIUM.

Bibliothèque de l'Office du Travail. 2, rue Lateriale.....Bruxelles.
Bibliothèque de Statistique (Ministère de l'Intérieur et de l'Instruction Publique). 3, rue de Louvain.....Bruxelles.
Caisse Générale de l'Epargne, de retraite et d'assurance sur la vie du Royaume de Belgique.....Bruxelles.
Compagnie Belge d'assurances générales sur la vie.....Bruxelles.
DECHAMPS, VICTOR, *Chef de Bureau*
à "La Médicale," Compagnie d'assurances contre les accidents.....Liège.
"L'Economie Belge," Compagnie d'assurances sur la vie et de rentes viagères.....Bruxelles.
JAMOTTE, PAUL, *Directeur*
de la Compagnie d'assurances sur la vie "Sun Life of Canada".....Bruxelles.
"La Royale Belge," Compagnie d'assurances sur la vie.....Bruxelles.

CANADA.

JUNKIN, J. F., *Managing Director,*
Manufacturers Life Insurance Company.....Toronto.

DENMARK.

Danske Livsforsikringsselskabors Bibliothek.....Copenhagen.
"Faedrelandet" Andels Livsforsikringsselskabet.....Aarhas.
Folket Forsikrings Aktieselskabet.....Copenhagen.

"Le Mundus" Société d'assurances sur la vie.....Copenhagen.
"Nationale" Livforsikringsselskab.....Copenhagen.
Nordisk Livsforsikrings Aktieselskab.....Copenhagen.
"Tryg," Compagnie d'assurances sur la vie.....Copenhagen.

FRANCE.

Arboux, Jules, *Secrétaire Générale*
de la Ligue Nationale de la Prévoyance de la Mutualité. 78, rue Bonaparte.....Paris.
Dulac, Leopold, *Directeur*
de la Librairie des assurances. 8, rue Lamartine.....Paris.
Hamon, Georges, *Directeur*
du *Journal l'Assurances Modernes*.....Paris.
Institute des Actuaires Français. 50, rue Las Casas.....Paris.
"La Mutuelle Vie," Compagnie Mutuelle d'Assurances sur la vie. 6, Place
de la Cathédrale.....Rouen.
Olivreau, Edmond, *Directeur*
du *Moniteur des Assurances*. 16, rue Milton.....Paris.
Oudiette, Camille, *Directeur*
du *Journal des Assurances*. 22, rue Le Peletier.....Paris.
'Le Phénix," Compagnie français d'assurances sur la vie.....Paris.

GERMANY.

Akademie für Sozial und Handelswissenschaft.....Frankfurt-am-Main.
Allgemeiner Deutscher Versicherungs Verein.....Stuttgart.
Allgemeine Renten-Anstalt.....Stuttgart.
Allgemeine Versicherungs Anstalt im Grossherzogthum Baden.....Karlsruhe.
"Atlas," Deutsche Lebensversicherungs Gesellschaft....Ludwigshafen-am-Rhein.
"Augusta," Versicherungs Aktien Gesellschaft.....Berlin.
"Badische" Rück und Mitversicherungs Gesellschaft.....Mannheim.
Bendix, Ludwig, Dr. jur.,
Referendar. 15, Gerhardstrasse.....Berlin.
Berliner Handelskammer.....Berlin.
Berlinische Lebensversicherungs Gesellschaft.....Berlin.
Bohlmann, G., Dr. Phil. 9, Regensburgerstrasse.....Berlin.
"Concordia," Kölnische Lebensversicherungs Gesellschaft.....Köln
Deutsche "Anker" Pensions und Lebensversicherungs Aktien Gesellschaft..Berlin.
Deutsche Lebensversicherungs Bank "Arumita," Aktien Gesellschaft....München.
Deutsche Lebensversicherungs Gesellschaft.....Lübeck.
Deutsche Militärdienst und Lebensversicherungs Anstalt.....Hannover.
Deutscher Verein für Versicherungs Wissenschaft.
22, Spichernstrasse.....Charlottenburg, Berlin.
Frankfürter Transport, Unfall und Glas Versicherungs Aktien
Gesellschaft.....Frankfurt-am-Main.
Friederich Wilhelm Lebensversicherungs Aktien Gesellschaft.....Berlin.
Gisela Verein.....München.
Gothaer Lebensversicherungs Bank.....Gotha.
Hamburg-Bremen Allgemeine Rückversicherungs Gesellschaft.....Hamburg.
"Iduna," Lebens, Pensions und Leibrenten Versicherungs Gesellschaft.....Halle.
"Janus," Lebens und Pensions Versicherungs Gesellschaft.....Hamburg.
Kaiserliches Aufsichtsamt für Privatversicherung.....Charlottenburg, Berlin.

Kaiserliche Universitäts und Landes Bibliothek.....Strassburg.
Lebensversicherungs Anstalt für Armee und Marine.....Berlin.
Lebensversicherungs und Ersparnis Bank.....Stuttgart.
Magdeburger Lebensversicherungs Gesellschaft.....Magdeburg.
Mecklenburgische Lebensversicherungs Bank.....Schwerin.
Münchener Rückversicherungs Gesellschaft.....München.
"New York" Lebensversicherungs Gesellschaft, Abtheilung für Deutschland, Berlin.
Nürnberger Lebensversicherungs Bank.....Nürnberg.
PRANGE, OTTO, DR. PHIL.,
9, Linkstrasse.....Berlin.
Preussischer Beamten Verein.....Hannover.
Preussische Lebensversicherungs Aktien Gesellschaft.....Berlin.
Preussische Rentenversicherungs Anstalt.....Berlin.
Reichsamt des Innern.....Berlin.
RUGE, PROF. CARL, DR. PHIL.,
6, Jägerstrasse.....Berlin.
Sächsisches Ministerium des Innern, Statistisches Bureau.....Dresden.
"Securitas," Versicherungs Aktien Gesellschaft.....Berlin.
Serig'sche Buchhandlung, 76 Neumarkt.....Leipzig.
Süddeutsche Rückversicherungs Aktien Gesellschaft.....München.
"Teutonia," Allgemeine Renten, Kapital und Lebensversicherungs Bank..Leipzig.
"Thuringia," Versicherungs Aktien Gesellschaft.....Erfurt.
"Urania," Versicherungs Aktien Gesellschaft.....Dresden.
Vaterländische Lebensversicherungs Aktien Gesellschaft.....Elberfeld.
"Victoria" zu Berlin, Allgemeine Versicherungs Gesellschaft.....Berlin.
"Wilhelma," Allgemeine Versicherungs Aktien Gesellschaft.....Magdeburg.

GREAT BRITAIN.

Caledonian Insurance Company, 19 George St.....Edinburgh.
Clerical, Medical & General Assurance Society, 15 St. James' Square, S. W..London.
Eagle Insurance Company, 79 Pall Mall, S. W.....London.
Economic Life Assurance Society, 6 New Bridge St., E. C.....London.
Edinburgh Life Assurance Company, 22 George St.....Edinburgh.
English & Scottish Law Life Association, 12 Waterloo Place, S. W.....London.
Equitable Life Assurance Society, Mansion House St., E. C.....London.
Equity & Law Life Assurance Society, 18 Lincoln's Inn Fields, W. C.....London.
Faculty of Actuaries, 24 George St.....Edinburgh.
Friends' Provident Institution.....Bradford.
Institute of Actuaries, Staple Inn Hall, Holborn Bars, W. C.....London.
Law Life Assurance Society, 187 Fleet St., E. C.....London.
Law Union & Crown Assurance Company, 126 Chancery Lane, E. C.....London.
Legal & General Life Assurance Society, 10 Fleet St., E. C.....Londoh.
Life Association of Scotland, 82 Princes St.....Edinburgh.
Liverpool & London & Globe Insurance Company, 11 Cornhill, E. C.....London.
London & Lancashire Life Assurance Company, 66 Cornhill, E. C.....London.
London Life Association, Ltd., 81 King William St., E. C.....London.
Metropolitan Life Assurance Society, 13 Moorgate St., E. C.....London.
National Mutual Life Assurance Society, 39 King St.....London.
North British & Mercantile Assurance Company, 61 Threadneedle St., E. C..London.
Northern Assurance Company, 1 Moorgate St., E. C.....London.
Pelican & British Empire Life Office, 70 Lombard St., E. C.....London.
Provident Life Office, 50 Regent St.....London.
Prudential Assurance Company, Holborn Bars, W. C.....London.

Rock Life Assurance Company, 15 New Bridge St., E. C. ..... London.
Royal Insurance Company, 1 North John St. ..... Liverpool.
Scottish Amicable Life Assurance Society, 35 St. Vincent's Place ..... Glasgow.
Scottish Equitable Life Assurance Society, 28 St. Andrew's Sq. ..... Edinburgh.
Scottish Life Assurance Company, Limited, 19 St. Andrew's Sq. ..... Edinburgh.
Scottish Provident Institution, 6 St. Andrew's Sq. ..... Edinburgh.
Scottish Temperance Life Assurance Company, Limited,
105 St. Vincent's St. ..... Glasgow.
Scottish Widows' Fund Life Assurance Society, 9 St. Andrew's Sq. ..... Edinburgh.
University Life Assurance Society, 25 Pall Mall, S. W. ..... London.
Westminster Fire Office, 27 King St., Covent Garden, W. C. ..... London.
Westminster & General Assurance Association,
28 King St., Covent Garden, W. C. ..... London.
Yorkshire Fire & Life Insurance Company, St. Helen's Sq. ..... York.

HOLLAND.

Amsterdamsche Maatschappij van Levensverzekering ..... Amsterdam.
Doures, Dekker E.,
Representant pour la Hollande de la Compagnie d'assurances sur
la vie aux Indes Orientals ..... 's Gravenhage.
Eerste Levensverzekering Maatschappij Zonder Geneeskundig Onderzoek ..... Amsterdam.
"Holda" Versekering Maatschappij ..... Amsterdam.
ter Laag, Jacob William, *Director*,
Verzekering Bank "Victoria" ..... Amsterdam.
Nederlandsche Verzekerings Bank ..... Amsterdam.
"Raadpensionaris Johan de Witt" Algemeene Maatschappij van
Verzekering op het Leven en bij Ziekte ..... Tiel-Gelderland.
Rahusen, A. E., *Actuar*,
Eerste Nederlandsche Verzekering Maatschappij op het Leven
en entegen Invaliditeit ..... 's Gravenhage.
Snoeck, A. J., *Directeur*
de la Compagnie d'assurances sur la vie "Pietas" ..... Utrecht.
Twee Vereenigde Verzekering Maatschappijen ..... Amsterdam.
"Vesta" Maatschappij van Levenserzekering ..... Amsterdam.

HUNGARY.

Geller, S. Dr., *Rechtsanwalt* ..... Fünfkirchen.
National Unfall Versicherungs Aktien Gesellschaft ..... Budapest.
Rosa, Franz, Dr., *Advokat*, 16 Leopold Ring ..... Budapest.

ITALY.

Cassa Nazionale l'Assicurazione per gl'infortuna degli Operai sul Lavoro .... Milan.
Compagnia di Assicurazione di Milano ..... Milan.

JAPAN.

"Aikolu" Life Insurance Company ..... Tokio.
"Bukkio" Life Insurance Company ..... Kioto.

"Chohei" Insurance Company.....Tokio.
"Daido" Life Insurance Company.....Osaka.
Ito, M., Department of Agriculture.....Tokio.
"Jaijan" Life Insurance Company.....Tokio.
"Nagoya" Life Insurance Company.....Nagoya.
"Naikoku" Life Insurance Company.....Tokio.
"Nippon Kioikie" Life Insurance Company.....Osaka.
"Nippon" Life Insurance Company.....Osaka.
"Nisshu" Life Insurance Company.....Tokio.
"Osaka" Life Insurance Company.....Osaka.
"San-In" Life Insurance Company.....Matsuye.
"Shinshu Kioto" Life Insurance Company.....Kioto.
"Teikoku" Life Insurance Company.....Tokio.
"Yurin" Life Insurance Company.....Tokio.

RUSSIA.

Russische Gesellschaft für Versicherung von Capitalien und Renten..St. Petersburg.

SWEDEN.

Svenska Sifforsakringsbolagir.....Stockholm.

SWITZERLAND.

Baseler Lebens Versicherungs Gesellschaft.....Basel.
Direction générale des chemins de fer Fédéral.....Berne.
Schweizerische Rückversicherungs Gesellschaft.....Zurich.

UNITED STATES.

Atkinson, Edward,
Boston Manufacturers' Mutual Fire Insurance Company.....Boston, Mass.
Fidelity Mutual Life Insurance Company.....Philadelphia, Pa.
Foster, Alfred D., *Vice President*,
New England Life Insurance Company.....Boston, Mass.
Hooper, W. de M., 87 Nassau St.....New York, N. Y
Nollen, S., *Secretary*,
Bankers' Life Association.....Des Moines, Ia.
Seitz, J. Charles,
State Life Insurance Company.....Indianapolis, Ind.
Spectator Company, The, 95 William St.....New York, N. Y.
Stevens, Benjamin F., *President*,
New England Mutual Life Insurance Company.....Boston, Mass.
Trull, S. Franksford, *Secretary*,
New England Mutual Life Insurance Company.....Boston, Mass.
Wolfe, S. H., 11 Broadway.....New York, N. Y.

REGULATIONS

OF THE

CONGRESS

REGULATIONS OF THE CONGRESS

1. The Congress is confined to questions of interest to the actuarial profession.

2. Those only can become members of the Congress who are either:

(1) Persons delegated by a government to represent it officially at the Congress;

(2) Members of a regularly established actuarial society;

(3) Members of the Permanent Committee of International Congresses of Actuaries;

(4) Members of one of the three preceding International Congresses of Actuaries;

(5) Actuaries regularly employed by an office recognized by the Organizing Committee;

(6) Persons admitted exceptionally by the Organizing Committee. The Organizing Committee has interpreted the second class as including those of the first and second degrees in any society having more than one degree of membership. Those who have passed the examination of the Faculty of Actuaries of Scotland corresponding to the examinations of the Institute of Actuaries for the degree of Associate have been counted eligible to membership. The only persons admitted exceptionally have been university lecturers on actuarial subjects and members of the National Insurance Convention of the United States.

3. Any person eligible as provided in Article 2 becomes a member of the Congress by sending a written request to the Correspondent for his country or to the Secretary of the Organizing Committee, and by paying a fee of twenty francs or its equivalent to the Correspondent or to the Treasurer of the Organizing Committee, before August 20, 1903.

4. The Organizing Committee may designate an Honorary President and Honorary Vice-Presidents of the Congress.

5. Each member regularly admitted receives a card of admission to the sessions of the Congress, and is entitled to receive gratuitously the report of the proceedings which is to be published by the Organizing Committee. Subscribers of twenty francs or its equivalent, not eligible for membership in the Congress, will be entitled to a copy of the proceedings.

6. The programme for the work of the Congress is fixed by the Organizing Committee in conjunction with the Council of the Permanent Committee, and is communicated to those entitled to become members.

7. The Organizing Committee and the Council of the Permanent Committee secure as many reports as possible from different countries on the questions presented for such reports in the programme, together with papers on various questions of actuarial science. Topics for general discussion are provided in the Plan of the Sessions.

8. The official language of the Congress is English, but papers are

received in French or German, and either the papers or short abstracts of them are printed in all three languages.

9. The Sessions take place at 215 West 57th Street, as follows: Monday, August 31, to Saturday, September 5, inclusive, at 10 o'clock in the morning; Monday and Tuesday, also Thursday and Friday, of the same week, at 2:30 in the afternoon.

10. The officers of the Permanent Committee installed provisionally by the Organizing Committee open the Congress and cause it to proceed to the election of permanent officers. The members present elect a President and General Secretary. If there is not a clear majority a ballot takes place, when a plurality shall elect. Each group of members of the same nationality, having at least fifteen members or subscribers, and having at least five members present, elects one of their number a Vice-President and one a Secretary of the Congress. Members of all other nationalities join together as a single group, who shall elect from among themselves a Vice-President and a Secretary.

11. The President presides over the sessions of the Congress, and may be replaced by one of the Vice-Presidents, designated by him, or, in his absence, by the officers present.

12. No resolution expressive of scientific opinion shall be entertained at the Congress.

13. The Congress itself has entire power on all points not provided for by the regulations of the Permanent Committee or by the present regulations.

14. The Committee of Organization has entire charge of the finances.

15. Membership in the Congress implies acceptance of the regulations of the Permanent Committee and of the present regulations.

RÈGLEMENT DU CONGRÈS

1. Le Congrès est limité aux questions intéressant la profession d'actuaire.

2. Seules peuvent être membres du Congrès les personnes appartenant aux catégories suivantes:

(1) Personnes déléguées par un gouvernement pour le représenter au Congrès.
(2) Membres d'une société d'actuaires régulièrement constituée.
(3) Membres du Comité permanent des Congrès Internationaux d'Actuaires.
(4) Membres d'un des trois précédents Congrès Internationaux d'Actuaires.
(5) Actuaires régulièrement attachés à un bureau reconnu par le Comité d'organisation.
(6) Personnes exceptionnellement admises par le Comité d'Organisation. Le Comité d'Organisation a considéré la seconde catégorie comme comprenant les personnes qui ont obtenu le premier ou le second degré dans les sociétés ayant plus d'une catégorie de membres. Ceux qui ont passé l'examen de la "Faculty of Actuaries of Scotland" correspondant aux examens de l' "Institute of Actuaries" pour le grade d'Associate ont été considérés comme pouvant être membres. Les seules personnes exceptionnellement admises sont des professeurs d'Université traitant dans leurs leçons des questions actuarielles et des membres de la "National Insurance Convention of the United States."

3. Toute personne pouvant être membre en vertu de l'Article 2, le deviente effectivement en envoyant une demande écrite au correspondant de son pays au Secrétaire du Comité d'Organisation et en payant une cotisation de vingt frans (ou son équivalent) entre les mains du Correspondant ou du Trésorier du Comité d'Organisation avant le 20 août 1903.

4. Le Comité d'Organisation peut nommer un Président d'honneur et des Vice-Présidents d'honneur du Congrès.

5. Tout membre régulièrement admis reçoit une carte d'admission aux séances du Congrès et a le droit de recevoir gratuitement le compte-rendu des travaux qui sera publié par le Comité d'Organisation. Les souscripteurs, qui, sans pouvoir être membres du Congrès, auront payé la cotisation de vingt francs (ou sou équivalent) auront droit au compte-rendu des travaux.

6. Le programme des travaux du Congrès est arrêté par le Comité d'Organisation d'accord avec le Conseil de Direction du Comité permanent et communiqué à ceux qui ont le droit d'être membres.

7. Le Comité d'Organisation et le Conseil de Direction du Comité permanent chercheront à obtenir le plus de rapports possible des différents pays sur les questions indiquées à cet effet dans le programme, en même temps que des notices sur divers sujets de science actuarielle. Les matières

qui feront l'objet de discussions générales figurent au programme des séances.

8. La langue anglaise est la langue officielle du Congrès; mais les rapports peuvent être écrits en français ou en allemand. Les rapports ou on court résumé de chacun d'eux seront imprimés dans les trois langues.

9. Les séances du Congrès ont lieu à la 57e rue, 215 W, comme suit: du lundi au samedi 5 septembre inclusivement, à 10 h. du matin; et aussi lundi, mardi, jeudi et vendredi de la même semaine, à 2 1-2 h. après midi.

10. Le Bureau du Comité permanent, reprenant les pouvoirs du Comité d'Organisation, ouvre le Congrès et l'invite à procéder à l'élection de son Bureau. Les membres présents élisent un Président et un Secrétaire-général. A défaut de majorité, un ballotage a lieu et la nomination se fait à la pluralité des voix. Chaque groupe de même nationalité réunissant au moins 15 membres ou souscripteurs et comprenant au moins 5 membres présents, nomme parmi eux un vice-Président et un Secrétaire du Congrès. Les membres des autres nationalités se réunissent en un seul groupe et nomment parmi eux un vice-Président et un Secrétaire.

11. Le Président préside les séances du Congrès; il peut être remplacé par un des vice-Présidents désigné par lui ou par les membres du Bureau en son absence.

12. Le Congrès ne prendra aucune résolution officielle sur un thème scientifique.

13. Le Congrès a tous pouvoirs pour tous les points non prévus par le règlement du Comité permanent ou par le présent règlement.

14. Le Comité d'organisation a l'administration financière du Congrès.

15. La qualité de membre du Congrès implique l'acceptation du règlement du Comité permanent ainsi que du présent règlement.

KONGRESS-REGELN

1. Der Kongress beschränkt sich auf Fragen der Lebensversicherungs-Wissenschaft. (Actuarial profession.)

2. Mitglieder des Kongresses können nur solche Personen werden, welche einer der folgenden Gruppen angehören:

(1) Personen, welche von einer Regierung mit deren offizieller Vertretung auf dem Kongress beauftragt sind;

(2) Mitglieder eines Vereins welcher versicherungs-wissenschaftlichen Zielen gewidmet ist;

(3) Mitglieder des ständigen Ausschusses für internationale versicherungs-wissenschaftliche Kongresse;

(4) Mitglieder eines der drei früheren internationalen Kongresse für Versicherungs-Wissenschaft;

(5) Versicherungs-Techniker, welche auf einem vom Organisations-Kommittee anerkannten Bureau angestellt sind;

(6) Ausnahmsweise vom Organisations-Kommittee zugelassene Personen.

Das Organisations-Kommittee hat hinsichtlich der zweiten Gruppe die Auslegung getroffen, dass darunter alle Personen fallen, welche Mitglieder des ersten oder zweiten Grades eines mehr als eine Klasse von Mitgliedern umfassenden Vereins sind. Diejenigen, welche bei der Faculty of Actuaries of Scotland die den Associate-Prüfungen beim Institute of Actuaries entsprechenden Prüfungen abgelegt haben, sind zur Mitgliedschaft zugelassen worden. Ausnahmsweise als Mitglieder zugelassen worden sind nur Universitäts-Lehrer für Versicherungs-Wissenschaft und Mitglieder der National Insurance Convention of the United States.

3. Wer nach Artikel 2 als Mitglied zugelassen werden kann, wird dieses durch Einsendung einer schriftlichen Anmeldung an den Landes-Korrespondenten oder den Sekretär des Organisations-Kommittees, und durch Zahlung eines Betrages von 20 Francs bezw. der entsprechenden Summe an den Korrespondenten oder den Schatzmeister des Organisations Kommittees vor dem 20. August 1903.

4. Das Organisations-Kommittee kann einen Ehren-Präsidenten und Ehren-Vice-Präsidenten für den Kongress ernennen.

5. Jedes in gehöriger Weise zugelassene Mitglied erhält eine Eintritts-Karte zu den Kongress-Verhandlungen und hat ohne weiteres Entgelt das Anrecht auf den vom Organisations-Kommittee zu veröffentlichenden Versammlungs-Bericht. Subskribenten, welche 20 Francs oder den entsprechenden Betrag zahlen, erhalten ebenfalls ein Exemplar des Berichts.

6. Der Arbeitsplan des Kongresses wird vom Organisations-Kommittee in Verbindung mit dem Rat des ständigen Ausschusses festgesetzt und den Mitgliedern zugestellt.

7. Das Organisations-Kommittee und der Rat des ständigen Ausschusses sammeln möglichst viele Berichte von den verschiedenen Län-

dern über die im Arbeitsplan zur Erörterung vorgesehenen Fragen, sowie andere versicherungs-wissenschaftliche Abhandlungen. Angelegenheiten zur allgemeinen Diskussion werden in den Arbeitsplan der Verhandlungen aufgenommen.

8. Die offizielle Kongress-Sprache ist englisch; es werden aber auch in deutscher oder französischer Sprache eingereichte Abhandlungen angenommen, und alsdann entweder die Abhandlungen selbst oder Auszüge in allen drei Sprachen gedruckt.

9. Die Sitzungen finden in No. 215 West 57. Str., New York, wie folgt, statt: Montag, den 31. August bis Samstag, den 5. September einschliesslich, jeweils Vormittags um 10 Uhr, Montag, Dienstag, Donnerstag und Freitag in derselben Woche um halb 3 Uhr Nachmittags.

10. Der Vorstand des ständigen Ausschusses eröffnet als augenblickliches Organisations-Kommittee den Kongress und veranlasst diesen zur Wahl eines Vorstandes. Die anwesenden Mitglieder wählen einen Präsidenten und General-Sekretär. Ergiebt sich keine Majorität, so findet eine förmliche Abstimmung statt, wobei einfache Stimmenmehrheit entscheidet. Jede Gruppe von Mitgliedern desselben Landes, das wenigstens fünfzehn Mitglieder oder Subskribenten und mindestens fünf anwesende Mitglieder aufzuweisen hat, wählt aus den Anwesenden einen Vice-Präsidenten und einen Sekretär für den Kongress. Die Mitglieder aller anderen Länder verbinden sich zu einer Gruppe, welche aus ihrer Mitte einen Vice-Präsidenten und einen Sekretär wählen.

11. Der Präsident leitet die Kongress-Sitzungen. Er kann von einem der Vice-Präsidenten vertreten werden, den er oder, in seiner Abwesenheit, der Kongress-Vorstand beruft.

12. Förmliche Beschlüsse über wissenschaftliche Fragen sollen auf dem Kongresse nicht gefasst werden.

13. Der Kongress selbst hat das uneingeschränkte Recht zur Regelung aller nicht von der vorliegenden oder der Geschäftsordnung des ständigen Ausschusses erledigten Punkte.

14. Das Organisations-Kommittee hat hinsichtlich der Finanzen uneingeschränkte Vollmacht.

15. Die Mitgliedschaft beim Kongresse schliesst das Einverständniss mit der vorliegenden Geschäftsordnung und der des ständigen Ausschusses ein.

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REGULATIONS

OF THE

PERMANENT COMMITTEE

REGULATIONS OF THE PERMANENT COMMITTEE OF THE INTERNATIONAL ACTUARIAL CONGRESSES

(With the modifications recommended by the *Executive Council* and adopted by the International Congress on the 20th May, 1898.)

Art. 1.

The Permanent Committee of International Actuarial Congresses is established to be a bond between the Actuaries and also the Associations of Actuaries of various countries.

Its headquarters are at Brussels.

Art. 2.

It has for objects:

1. To originate and to follow out all works or researches interesting in the Science or in the practice of the Actuary;

2. To publish periodically a Journal: *a.* bringing together all information, technical, legislative, statistical, or judicial, bearing upon Actuarial Science; *b.* summarizing the publications and the works, which appear in the different countries, bearing upon Actuarial matters; *c.* giving space, moreover, to original contributions of general interest to Actuaries;

3. To coöperate with the *Organizing Committees* in the preparation of the work of International Congresses, and in the publication of their Proceedings.

Art. 3.

The *Associate* members of the Permanent Committee shall be all those who are admitted by the *Executive Council*, hereinafter defined, and who undertake to pay an annual minimum contribution of 10 frcs.

The *Donation* members shall be those Associate members who undertake to pay a minimum annual contribution of 50 frcs. Their names shall be published each year in the Journal with a memorandum of the sums paid by them.

Associate Life members shall be those of the Associate members who have compounded for their annual subscriptions by a minimum payment of 200 frcs., made in instalments during one or two years at the most.

Donation Life members shall be those Donation members who have compounded for their annual subscriptions by a minimum payment of 1000 frcs., made in instalments during one or two years at the most.

Public (Governmental) Departments of the different countries, Assurance Companies, and generally all Institutions, Societies, or Associations, having for their object the study or the practical application of thrift and Social Economy, may become *Associate* members, or *Donation* members, of the Permanent Committee.

The *Associate* members, and the *Donation* members shall receive, free the Journal of the Permanent Committee.

ART. 4.

The Permanent Committee shall be governed by an International *Executive Council* consisting of forty members, and including the thirty-three members who were appointed by the first International Congress of Actuaries at its meeting of 6th September, 1895, and such members as shall be in future elected by the Executive Council itself, proceeding by co-option.

Each country possessing Actuaries shall be, as far as possible, represented in the Executive Council by one or several members.

The members of the Executive Council shall be elected for four years and shall be eligible for re-election.

The re-election shall take place each year and by one-fourth of the members of the Council. During the transitional state the members to retire in 1897, 1898 and 1899 shall be decided by lot.

The election shall be made by those members not retiring, and it can take place by correspondence.

ART. 5.

Each year the Executive Council shall choose from among its own members a *Bureau* consisting of a President, seven Vice-Presidents, a General Secretary, a Treasurer, and seven Secretaries, distributed, as far as possible, among the members representing the different countries.

The Executive Council may moreover nominate correspondents, whose duty it shall be to represent it in those countries where it is not represented by any member of the Bureau.

It may also appoint, as temporary consultative members, members of the Permanent Committee not already on the Executive Council, to carry through matters remitted to it by International Congresses.

The election of the bureau may take place by correspondence.

ART. 6.

The Executive Council shall meet as a rule at the headquarters of the Permanent Committee, and shall be convened by the President or, failing him, by the General Secretary. The Bureau may, nevertheless, convene a meeting of the Council in any other town when special circumstances seem to justify such an exceptional course.

Notice of meeting accompanied by a detailed agenda shall be sent to each member of the Executive Council at least one month before the date fixed for the meeting. Those members who find themselves unable to attend at a meeting may send to the President their views on the questions on the agenda.

In case of urgency, the President and the General Secretary may take such steps as may be found necessary, provided always that they submit them at the earliest possible moment for ratification by the Executive Council.

Decisions of secondary importance may be taken without convening a meeting of the Council, on the vote of an absolute majority of the

members of the Executive Council, given by correspondence on the invitation of the President.

Ten members of the Executive Council shall form a quorum. If this number be not present at a meeting, the President may take a vote by correspondence as explained in the last preceding paragraph.

The Executive Council may authorize those members, who, on account of the distance of their residence, are unable to send in their views by correspondence within one month, to be represented, for the purpose of voting, by European members of the Council.

In case of equality of votes, the President shall have a casting vote.

ART. 7.

The place and date of each International Congress shall be fixed either by the last preceding Congress, or, failing that, by the Executive Council, which in such case shall be guided by the convenience of the Actuaries of the different countries interested, and by the advice of the Societies of Actuaries established in those countries. The Executive Council shall establish in the country designated, an *Organizing Committee.* The Organizing Committee shall prepare a programme of the business in concert with the Executive Council. It shall defray all expenses of the Congress and of publishing its proceedings.

During the period in which the International Congress is being organized, two members of the Organizing Committee of such Congress shall be temporarily added to the Executive Council, and shall have the same powers as the ordinary members.

ART. 8.

The income of the Permanent Committee shall consist:

1. Of the contributions of its members;
2. Of the subsidies that may be granted to it by public (Governmental) departments of the different countries;
3. Of the subsidies which may be granted to it by the different Institutions, Societies or Associations.
4. Of the interest on its invested funds, and
5. Of sundry receipts.

ART. 9.

There shall be formed a Reserve Fund, into which shall be paid:

1. The sums received in commutation of subscriptions;
2. The contributions and subsidies made on the condition that they shall be placed to the Reserve Fund, and
3. Such sums as the Executive Council shall think wise to carry to the Reserve Fund.

The Reserve Fund shall be invested in the Public Debt of Belgium. It cannot be trenched upon except by a formal decision of an International Congress taken on the motion of the Executive Council. The income derived therefrom may be applied to defray the ordinary expenses.

ART. 10.

The present regulations cannot be altered except by a future International Congress on the motion of the Executive Council or at the

request of twenty-five members of the Congress. In this latter case the proposal must be communicated to the Executive Council at least one month before the date fixed for the opening of the Congress.

ART. 11.

With the formalities prescribed in the last preceding article, any future International Congress may, by a majority of two-thirds at least of the members present, dissolve the Executive Council, and dispose of the available capital, as also of all documents, works, and sundry archives, belonging to the Committee.

RÈGLEMENT DU COMITÉ PERMANENT DES CONGRÈS INTERNATIONAUX D'ACTUAIRES

(Avec les modifications proposées par le *Conseil de Direction* et adoptées par le Congrès International, le 20 mai 1898.)

Art. 1.

Le Comité permanent des Congrès internationaux d'Actuaires a pour objet de servir de lien entre les Actuaires et les Associations d'Actuaires des différents pays.

Son siège social est à Bruxelles.

Art. 2.

Il a pour attributions:

1° De provoquer ou de poursuivre tous travaux ou recherches intéressant la science ou la pratique de l'Actuariat;

2° De publier périodiquement un Bulletin: *a.* réunissant les informations techniques, législatives, statistiques et juridiques se rapportant à la science actuarielle; *b.* analysant les publications et les travaux parus dans les divers pays et ayant trait à l'Actuariat; *c.* pouvant, en outre, donner place à certains mémoires originaux d'un intérêt général pour les Actuaires;

3° De concourir, conjointement avec les *Comités d'organisations*, à la préparation des travaux des Congrès internationaux et à la publication de leurs comptes rendus.

Art. 3.

Sont membres *adhérents* du Comité permanent, tous ceux qui sont admis par le *Conseil de Direction* institué ci-après, et qui s'engagent à payer une cotisation annuelle minima de dix francs.

Sont membres *donateurs*, ceux des membres adhérents qui s'engagent à payer une cotisation annuelle minima de cinquante francs. Leurs noms sont publiés chaque année dans le Bulletin, avec l'indication des sommes versées par eux.

Sont membres *adhérents à vie*, ceux des membres adhérents qui ont racheté leur cotisation annuelle par un versement minimum de deux cents francs, effectué en une ou deux annuités au plus.

Sont membres *donateurs à vie*, ceux des membres donateurs qui ont racheté leur cotisation annuelle par un versement minimum de mille francs, effectué en une ou deux annuités au plus.

Peuvent être membres adhérents ou donateurs du Comité permanent, les administrations publiques des divers pays, les compagnies d'assurances et en général, toutes les institutions, sociétés ou associations ayant pour objet l'étude ou la mise en pratique des questions de prévoyance et d'économie sociale.

Les membres adhérents et donateurs reçoivent gratuitement le Bulletin du Comité permanent.

ART. 4.

Le Comité permanent est administré par un *Conseil de Direction* international de quarante membres, comprenant les trente-trois membres qui ont été désignés par le premier Congrès international d'Actuaires, dans sa séance du 6 septembre 1895, et les membres qui seront ultérieurement désignés par le Conseil lui-même, procédant par voie de co-optation.

Tous les pays possédant des Actuaires seront, autant que possible, représentés dans le Conseil par un ou plusieurs membres.

Les membres du Conseil sont élus pour quatre ans et rééligibles.

Le renouvellement se fait tous les ans par quart. Comme mesure transitoire, le soit désignera ceux des membres actuels qui sortiront en 1897, en 1898 et en 1899.

L'élection est faite par les membres non sortants. Elle peut avoir lieu par correspondance.

ART. 5.

Tous les ans, le Conseil de Direction choisit dans son sein un *Bureau* composé d'un Président, de sept Vice-Présidents, d'un Secrétaire général, d'un Trésorier et de sept Secrétaires, répartis, autant que possible, parmi les membres des différents pays.

Le Conseil pourra, en outre, désigner des correspondants chargés de le représenter dans les pays auxquels n'appartiendra aucun membre du Bureau.

Il pourra également s'adjoindre, à titre temporaire et consultatif, des membres du Comité permanent ne faisant pas partie du Conseil, pour mener à bien les travaux dont l'exécution lui aura été confiée par les Congrès internationaux.

L'élection du Bureau pourra avoir lieu par correspondance.

ART. 6.

Le Conseil de Direction se réunit en principe au siège du Comité permanent, sur convocation du Président ou, à son défaut, du Secrétaire général. Le Bureau peut néanmoins convoquer le Conseil dans une autre ville lorsque des circonstances particulières lui paraîtront justifier cette mesure exceptionelle.

La convocation, accompagnée d'un ordre du jour détaillé, doit être adressée à tous les membres du Conseil, au moins un mois avant la date de la réunion. Les membres qui se trouvent empêchés d'assister à une séance peuvent faire parvenir au Président leur avis sur les questions à l'ordre du jour.

En cas d'urgence, le Président et le Secrétaire général peuvent prendre les mesures nécessaires, sauf à les soumettre le plus tôt possible à la ratification du Conseil.

Les décisions d'importance secondaire peuvent être prises, sans que le Conseil se réunisse, à la majorité absolue des suffrages exprimés par correspondance sur l'invitation du Président.

Pour que le Conseil puisse délibérer valablement, il faut que dix membres au moins assistent à la séance. Si cette condition n'est pas remplie, le Président peut recourir au vote par correspondance, ainsi qu'il est dit au paragraphe précédent.

Le Conseil peut autoriser ceux de ses membres qui, à raison de l'éloignement de leur résidence, n'auraient pas huit jours francs pour leur réponse dans le délai total d'un mois pour la correspondance aller et retour, à se faire représenter pour le vote par des membres européens du Conseil.

En cas de partage, la voix du Président est prépondérante.

ART. 7.

Le lieu et la date de chaque Congrès international sont fixés soit par le Congrès précédent, soit, à son défaut, par le Conseil de Direction qui, dans ce cas, s'inspire, pour cette fixation, des convenances des divers pays intéressés et de l'avis des groupements d'Actuaires constitués dans ces pays.

Le Conseil de Direction provoque, dans le pays désigné, la constitution d'un *Comité d'organisation.*

Le Comité d'organisation prépare le programme des travaux, de concert avec le Conseil de Direction. Il supporte tous les frais du Congrès et de ses publications.

Pendant la période d'organisation d'un Congrès international, deux membres du Comité d'organisation de ce Congrès sont temporairement adjoints au Conseil de Direction et avec les mêmes pouvoirs que les membres titulaires.

ART. 8.

Les ressources du Comité permanent se composent:

1° Des cotisations de ses membres;

2° Des subventions qui peuvent lui être accordées par les pouvoirs publics des différents pays;

3° Des subsides qui peuvent lui être accordées par diverses institutions, sociétés ou associations;

4° Du revenu des fonds placés et des recettes diverses.

ART. 9.

Il est créé un fonds de réserve qui reçoit:

1° Le prix de rachat des cotisations;

2° Les subventions ou subsides accordés sous condition d'être versés à ce fonds;

3° Les sommes que le Conseil de Direction juge utile d'y verser.

Le fonds de réserve est employé en Dotte de l'Etat belge. Il ne peut être aliéné en tout ou partie que par une décision du Congrès international prise sur la proposition du Conseil de Direction. Ses revenus peuvent être affectés aux dépenses ordinaires.

ART. 10.

Le présent Règlement ne peut être modifié que par les Congrès internationaux ultérieurs, sur la proposition du Conseil de Direction ou sur l'initiative de vingt-cinq membres du Congrès. Dans ce dernier cas, la proposition doit être communiquée au Conseil de Direction au moins un mois avant l'ouverture du Congrès.

ART. 11.

Dans les formes prescrites par l'article précédent, les Congrès internationaux ultérieurs pourront, à la majorité des deux tiers au moins des membres présents, prononcer la dissolation du Comité permanent et régler l'emploi des capitaux disponibles, ainsi que l'attribution des documents, ouvrages et archives divers appartenant à ce Comité.

SATZUNGEN DES STÄNDIGEN AUSSCHUSSES DER INTERNATIONALEN KONGRESSE FÜR VERSICHERUNGS-WISSENSCHAFT

(Mit dem vom *Verwaltungsrat* vorgeschlagenen und vom Internationalen Kongresse am 20ten Mai 1898 angenommenen Abänderungen.)

Art. 1.

Der ständige Ausschuss der internationalen Kongresse für Versicherungs-Wissenschaft soll als Bindeglied zwischen den Aktuaren und den Vereinigungen der Aktuare der verschiedenen Länder dienen.

Sein Sitz ist Brüssel.

Art. 2.

Es liegt ihm ob:

1. Alle für Aktuare in wissenschaftlicher oder praktischer Hinsicht bedeutsamen Arbeiten oder Untersuchungen zu veranlassen oder in's Werk zu setzen;

2. Eine Zeitschrift zu veröffentlichen, worin: *a.* die auf die Versicherungswissenschaft bezüglichen Nachrichten aus dem Gebiete der Technik, der Gesetzgebung, der Statistik und der Rechtswissenschaft gesammelt; *b.* der Inhalt der in den verschiedenen Ländern erschienenen versicherungs-wissenschaftlichen Schriften kurz mitgeteilt; *c.* einzelne Abhandlungen, die für die Aktuare allgemeines Interesse bieten, nach Füglichkeit veröffentlicht werden;

3. Gemeinschaftlich mit den *Organisations-Ausschüssen* die Arbeiten der Internationalen Kongresse vorzubereiten und die Berichte über letztere herauszugeben.

Art. 3.

Mitglied des ständigen Ausschusses kann Jeder werden, der vom *Verwaltungsrat* (Art. 4) zugelassen wird und sich zur Zahlung eines jährlichen Beitrags von mindestens 10 Franken verpflichtet.

Schenkende Mitglieder heissen diejenigen Mitglieder, die sich zur Zahlung eines jährlichen Beitrags von mindestens 50 Franken verpflichten; ihre Namen und Beiträge werden in jedem Jahre durch die Zeitschrift veröffentlicht.

Mitglieder *auf Lebenszeit* lösen den Jahresbeitrag dadurch ab, dass sie binnen eines oder höchstens zweier Jahre mindestens 200 Franken zahlen.

Schenkende Mitglieder *auf Lebenszeit* lösen den Jahresbeitrag dadurch ab, dass sie binnen eines oder höchstens zweier Jahre mindestens 1000 Franken zahlen.

Mitglieder des ständigen Ausschusses können werden: öffentliche Behörden der verschiedenen Länder, Versicherungsgesellschaften und überhaupt alle Anstalten, Gesellschaften oder Vereinigungen, die sich

mit der Theorie oder der Praxis der Fürsorge oder der Volkswirtschaft beschäftigen.

Die Mitglieder erhalten die Zeitschrift des ständigen Ausschusses kostenlos.

Art. 4.

Die Geschäfte des ständigen Auschusses führt der internationale *Verwaltungsrat*, der aus vierzig Mitgliedern besteht und zwar aus den vom ersten internationalen Kongress für Versicherungs-Wissenschaft am 6. September 1895 gewählten dreiunddreissig Mitgliedern und den später vom Verwaltungsrat selbst hinzugewählten Mitgliedern.

Alle Länder, in denen Aktuare leben, sollen nach Möglichkeit durch ein oder mehrere Mitglieder im Verwaltungsrat vertreten sein.

Die Mitglieder des Verwaltungsrats werden für vier Jahre gewählt. Die Wiederwahl ist statthaft.

Jährlich scheidet ein Viertel aus. Wer von den jetzigen Mitgliedern in den Jahren 1897, 1898 und 1899 ausscheiden soll, bestimmt zunächst das Los.

Die nicht ausscheidenden Mitglieder nehmen die Wahl vor. Letztere darf auf schriftlichem Wege erfolgen.

Art. 5.

Alljährlich wählt der Verwaltungsrat aus seiner Mitte den *Vorstand*, der aus dem Vorsitzenden, sieben Vice-Präsidenten, dem General-Sekretär, dem Schatzmeister und sieben Schriftführern besteht. Bei der Verteilung der Aemter sollen die verschiedenen Länder möglichst berücksichtigt werden.

Der Verwaltungsrat kann auch korrespondirende Mitglieder wählen, die ihn in den nicht im Vorstand berücksichtigten Ländern vertreten sollen.

Der Verwaltungsrat kann Mitglieder des ständigen Ausschusses, die dem Verwaltungsrat nicht angehören, vorübergehend mit beratender Stimme cooptiren, um Arbeiten auszuführen, die ihm von einem internationalen Kongresse übertragen sind.

Der Vorstand kann auf schriftlichem Wege gewählt werden.

Art. 6.

Der Verwaltungsrat versammelt sich in der Regel am Sitze des ständigen Ausschusses auf Einladung des Vorsitzenden, oder, wenn dieser nicht vorhanden ist, des Generalsekretärs. Der Vorstand kann jedoch den Verwaltungsrat nach einer anderen Stadt berufen, wenn besondere Umstände diese ausserordentliche Massregel zu rechtfertigen scheinen.

Die mit genauer Angabe der Tagesordnung versehene Einladung muss allen Mitgliedern des Verwaltungsrats mindestens einen Monat vor der Versammlung zugestellt werden. Die am Erscheinen verhinderten Mitglieder können ihre Ansicht über die Gegenstände der Tagesordnung dem Vorsitzenden schriftlich zukommen lassen.

Bei Gefahr im Verzuge können der Vorsitzende und der Generalsekretär die notwendigen Massnahmen treffen, jedoch müssen sie so bald als möglich die nachträgliche Genehmigung des Verwaltungsrats einholen.

In minder wichtigen Angelegenheiten kann der Verwaltungsrat auf

Veranlassung des Vorsitzenden auf schriftlichem Wege mit absoluter Stimmenmehrheit Beschlüsse fassen.

Zur Beschlussfähigkeit des Verwaltungsrats ist die Anwesenheit von mindestens zehn Mitgliedern erforderlich. Wird diese Zahl nicht erreicht, so kann der Vorsitzende nach Massgabe des vorigen Absatzes die schriftliche Abstimmung veranlassen.

Der Verwaltungsrat kann denjenigen Mitgliedern, die wegen weiter Entfernung ihres Wohnsitzes innerhalb des für den Schriftwechsel zu gewährenden Monats nicht eine volle Woche Zeit für die Abfassung ihrer Antwort haben, gestatten, ihre Stimme durch europäische Mitglieder des Verwaltungrats abgeben zu lassen.

Bei Stimmengleichheit entscheidet der Vorsitzende.

Art. 7.

Ort und Zeit für die Abhaltung jedes internationalen Kongresses werden von dem vorhergehenden Kongresse oder, wenn dieser es unterlassen hat, von dem Verwaltungsrat festgesetzt. Letzterer hat sich hierbei von den Wünschen der verschiedenen beteiligten Länder und von der Ansicht der in ihnen gebildeten Vereinigungen der Aktuare leiten zu lassen.

Der Verwaltungsrat veranlasst in dem für den nächsten Kongress gewählten Lande die Bildung eines *Organisationsausschusses.*

Der Organisationsausschuss bereitet das Arbeitsprogramm im Einverständniss mit dem Verwaltungsrat vor. Er trägt alle Kosten des Kongresses und seiner Veröffentlichungen.

Für die Dauer der Vorbereitung eines internationalen Kongresses treten zwei Mitglieder des Organisationsausschusses dem Verwaltungsrat mit allen Rechten der wirklichen Mitglieder bei.

Art. 8.

Die Einnahmen des ständigen Ausschusses bestehen in:

1. Den Beiträgen seiner Mitglieder;
2. Den etwaigen Zuwendungen von Seiten der öffentlichen Behörden der verschiedenen Länder;
3. Den etwaigen Zuwendungen von Seiten der Anstalten, Gesellschaften oder Vereinigungen;
4. Den Zinsen aus dem angelegten Vermögen und in anderen Einnahmen.

Art. 9.

Es wird ein Reservefonds gebildet. In diesen fliessen:

1. Die Ablösungssummen für Mitgliederbeiträge;
2. Die Zuwendungen, die unter der Bedingung, dem Reservefonds zugeführt zu werden, gemacht werden;
3. Die vom Verwaltungsrat dazu bestimmten Beträge.

Der Reservefonds wird in belgischen Staatsschuldverschreibungen angelegt. Er kann nur angegriffen werden auf Grund eines vom Verwaltungsrat beantragten Beschlusses des internationalen Kongresses. Die Zinsen können für gewöhnliche Ausgaben verwendet werden.

ART. 10.

Diese Satzungen können nur durch die künftigen internationalen Kongresse abgeändert werden, und zwar auf Antrag des Verwaltungsrats oder von fünf und zwanzig Kongressmitgliedern. Letzteren Falls muss der Antrag dem Verwaltungsrat mindestens einen Monat vor der Eröffnung des Kongresses mitgeteilt werden.

ART. 11.

Unter den Voraussetzungen des Artikels 10 können künftige Kongresse mit einer Mehrheit von mindestens zwei Dritteln der anwesenden Mitglieder den ständigen Ausschuss auflösen und über die Verwendung des vorhandenen Vermögens, der Archive und der Bibliothek des Ausschusses beschliessen.

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The order of the subjects of the papers to be discussed is substantially as follows: facts concerning mortality, facts concerning the rate of interest, technical propositions and suggestions, history of the growth of various kinds of insurance and other operations requiring actuarial advice, the protection of wives and children from the claims of creditors, miscellaneous legal subjects, the computation of liabilities, and the province and technical practice of state supervision.

The papers upon each theme from the same country are placed together, arranged according to the alphabetical order of the names of the writers; and the papers from different countries are arranged according to the alphabetical order of the names of the countries.

When each paper comes up for discussion, the author, or some friend representing him, if any, will take the floor. The paper will not be read, being already printed and in the hands of the members present. The author or his representative will make any supplementary explanations which have occurred to him, will answer questions from the members present, and will be asked by the President to close the discussion upon his paper.

Discussion may be made in English, French or German, and the regular translators of the Congress will repeat the substance of the remarks of each member in the other languages before the next speaker takes the floor.

L'ordre des sujets d'articles à discuter est en substance établi ainsi qu'il suit: faits concernant la mortalité, faits concernant le taux d'intérêt, propositions et conseils techniques, histoire du développement des divers genres d'assurance et d'autres opérations nécessitant l'avis d'un actuaire, protection des femmes et des enfants contre les réclamations des créanciers, sujets de droit divers, calcul du passif, étendue du contrôle d'Etat et son exercice technique.

Les articles concernant chaque question provenant d'un même pays sont classés ensemble, et arrangés suivant l'ordre alphabétique des noms de leurs auteurs; quant aux articles provenant de pays différents, ils sont arrangés suivant l'ordre alphabétiques des noms de pays.

Die Anordnung der zur Eroerterung gelangenden Abhandlungen ist im wesentlichen wie folgt: Sterblichkeits-Thatsachen; der Zinsfuss und betreffende Thatsachen; technische Vorschlaege und Anregungen; geschichtliche Entwickelung der verschiedenen Versicherungsarten und sonstige auf mathematischer Berechnung beruhende Untersuchungen; Schutz von Frauen und Kindern den Anspruechen der Glaeubiger gegenueber; verschiedene gesetzgeberische Angelegenheiten; die Berechnung der Praemienreserve und Fragen ueber das Gebiet und die technische Ausuebung der Staatsaufsicht.

Die aus einem Lande abstammenden Abhandlungen ueber dasselbe Thema werden in alphabetischer Reihenfolge der Autoren zusammengeordnet; die Abhandlungen aus verschiedenen Laen-

Chaque fois qu'un article est présenté à la discussion, son auteur, ou un ami qui le représente, s'il s'en trouve, prendra place sur l'estrade. L'article ne sera pas lu, attendu qu'il est déjà imprimé et entre les mains des membres présents. L'auteur ou son représentant donnera telles explications supplémentaires qu'il croira utiles, répondra aux questions des membres présents, et sera prié par le Président de clôturer en quelques mots la discussion de son article.

Les divers sujets peuvent être discutés en Anglais, Français ou Allemand, et les traducteurs attirés du Congrès reproduiront en substance dans les autres langues les remarques que chaque membre aura pu faire, avant que l'orateur suivant prenne la parole.

Zur Diskussion jeder Abhandlung wird das Wort dem Verfasser oder dessen Stellvertreter ertheilt. Die Abhandlungen, die schon gedruckt in Haenden sind, werden nicht vorgelesen. Der Verfasser oder dessen Stellvertreter wird etwaige ergaenzende Erklaerungen geben, Fragen anwesender Mitglieder beantworten, und wird vom Herrn Praesidenten aufgefordert werden die Verhandlung zum Abschluss zu bringen.

Die Verhandlungen koennen in englischer, franzoesischer oder deutscher Sprache stattfinden, und die amtlichen Uebersetzer des Kongresses werden den Inhalt aller Bemerkungen in den anderen Sprachen wiedergeben, ehe der naechste Redner folgt.

MONDAY, AUGUST 31, 10 A.M.

Opening of the Congress by the Council of the Permanent Committee.

Address of Mr. Lepreux, President of the Permanent Committee.

Election of the President and General Secretary of the Congress, the latter taking his seat.

Election of Vice-Presidents and Secretaries of the Congress; five or more members from any country to choose a Vice-President and a Secretary.

Installation of officers elected.

Introduction and address of the Hon. George B. Cortelyou, Minister of Commerce and Labor of the United States, Honorary President of the Congress.

Reception of messages from Honorary Vice-Presidents.

Address of the President.

Discussion of papers separately on the Improvement in Longevity:

GREAT BRITAIN:

Paper by Mr. Warner: *On the Improvement in Longevity during the Nineteenth Century.*

HOLLAND:

Paper by Messrs. Paraira and Landré: *La Prolongation de la Vie dans le Dix-Neuvième Siècle aux Pays-Bas.*

UNITED STATES:

Paper by Mr. J. K. Gore: *On the Improvement in Longevity in the United States during the Nineteenth Century.*

General Discussion on the Improvement in Longevity during the Nineteenth Century.

MONDAY, AUGUST 31, 2:30 P.M.

Discussion of papers separately on War Mortality:

GREAT BRITAIN:

Paper by Mr. Schooling: *War Risks, with Special Reference to the War in South Africa,* 1899-1902.

JAPAN:

Paper by Mr. Schida: *The Risk-Rate of the late Chino-Japanese War.*

UNITED STATES:

Paper by Mr. Hann: *War Mortality in the United States.*
General Discussion on Mortality in Time of War.
Discussion of papers separately on Mortality among Non-Caucasian Races:

GREAT BRITAIN:

Paper by Mr. Thomson: *Notes on Mortality in India and some other Tropical Countries.*

JAPAN:

Paper by Mr. Yano: *On the Mortality of the Japanese.*

UNITED STATES:

Paper by Mr. A. Hunter: *Mortality among Non-Caucasian Races.*
General Discussion on Mortality among Non-Caucasian Races.

GERMANY:

Discussion of paper by Mr. Eggenberger on Miners' Experience: *Invalidität und Mortalität bei den bayerischen Knappschaftskassen.*

TUESDAY, SEPTEMBER 1, 10 A.M.

Discussion of papers separately on new British Mortality Experience:

GREAT BRITAIN:

Paper by Mr. Hardy: *A Comparison of the* O^M *Table of Mortality with the adjusted American Table.*
Paper by Mr. King: *Brief Notes on the British Offices Mortality Experience,* 1863-1893.
General Discussion concerning the British Offices Mortality Experience, 1863-1893.

SWITZERLAND:

Discussion of Mr. Kihm's paper on Annuitants' Mortality: *Die Sterblichkeit der schweizerischen Rentner.*

General Discussion concerning Desirable Subjects for Future Mortality Investigations, preceded by explanations relating to the work of

the Committee of the Actuarial Society of America having charge of its recent investigation into the Experience of Thirty-four Life Companies upon Ninety-eight Classes of Risks. Questions concerning the work of the Committee will be responded to by the Chairman, Mr. McClintock, and questions relating to the preparation and sorting of the experience cards will be answered by Mr. Gore, who has had sole charge of the execution of the Committee's plans. A copy of this work has been presented to each member attending the Congress, and it is desired by the Organizing Committee that as many suggestions as possible concerning future work of a similar kind, in any country, be made by the members present as a result of their examination of this book. All such suggestions will be taken down by the English, French or German stenographer, as the case may be.

Discussion générale relative aux sujets qu'il serait désirable de traiter, en vue des recherches ultérieures sur la mortalité, précédée d'explications se rapportant aux travaux du Comité de l'Acturial Society of America chargé des recherches expérimentales dans trente-quatre compagnies d'assurances sur la vie et portant sur quatre-vingt-dix-huit catégories de risques. Monsieur McClintock, Président du Comité, répondra aux questions concernant les travaux du Comité et Monsieur Gore, qui seul a été chargé de l'exécution des plans du Comité, répondra à celles relatives à la préparation et au classement des cartes d'expériences. Un exemplaire de ce travail a été offert à chacun des membres assistant au Congrès et, dans opinion du Comité Organisateur, il serait désirable, qu'après lecture de ce volume, un ausssi grand nombre d'idées que possible fussent émises par les membres, à la séance, pour qu'en tous pays, à l'avenir, de semblables travaux puissent être effectués utilement. Toutes les observations de ce genre seront soigneusement enregistrées par le sténographe anglais, français ou allemand.

General-Diskussion über wünschenswerthe Gegenstände für zukünftige Sterblichkeits - Untersuchungen, mit vorausgehenden Erklärungen der Arbeiten des Komitees, welches die Untersuchungen der Actuarial Society of America über die Erfahrungen von vierunddreissig Lebens-Versicherungs Gesellschaften mit achtundneunzig Risiko-Klassen beaufsichtigt. Fragen über die Arbeiten dieses Komitees wird der Vorsitzende, Herr McClintock, beantworten; solche die sich auf Vorbereitung und Sortierung von Erfahrungskarten beziehen, beantwortet Herr Gore, welcher mit der alleinigen Aufsicht über die Ausführung der Pläne des Komitees betraut ist. Ein jedes, diesem Kongresse beiwohnende Mitglied hat ein Exemplar dieses Werkes empfangen, und werden die Herren Mitglieder ersucht, dem Organisations-Komitee irgend welche, aus ihrer Prüfung des Werkes hervorgehenden Vorschläge für zukünftige Arbeiten ähnlicher Art, in irgend welchem Lande, freundlichst zukommen zu lassen. Alle solche Vorschläge werden von dem englischen, deutschen oder französischen Stenographen niedergeschrieben werden.

TUESDAY, SEPTEMBER 1, 2:30 P.M.

Discussion of papers separately on the Probable Future Course of the Interest Rate:

AUSTRIA:

Paper by Mr. Grossmann: *Der wahrscheinliche Lauf des Zinssatzes in der Zukunft.*

BELGIUM:

Paper by Mr. Hankar: *Note sur les variations du taux de l'intérêt en Belgique pendant la période contemporaine.*

GREAT BRITAIN:

Paper by Mr. Burn: *The Probable Future Course of the Rate of Interest.*

General Discussion of the Future Interest Rate.

Discussion of papers separately on Technical Subjects:

AUSTRIA:

Paper by Mr. Hoppe: *Gemischte Capitalversicherung mit an einem bestimmten Termine erwachsendem unbedingten Anspruch auf Prämien-Rückgewähr.*

FRANCE:

Paper by Mr. Quiquet: *Sur l'emploi simultané de lois de survie distinctes.*

GREAT BRITAIN:

Paper by Mr. Elderton: *Notes on Actuarial Functions.*

Paper by Mr. Meikle: *On the Development of Tables derived from an Abridged Expression for the Calculated Expectation of Future Life.*

HOLLAND:

Paper by Mr. Peek: *On a Rational Method of Loading.*

Presentation of additional Technical Suggestions by members present.

WEDNESDAY, SEPTEMBER 2, 10 A.M.

GERMANY:

Discussion of paper by Mr. Dizler: *Theorie der Leibrenten mit Rückvergütung der Baareinlagen abzüglich der bereits bezogenen Renten.*

GERMANY:

Discussion of paper by Mr. Gunckel: *Die verschiedenen Systeme der Versicherung von geschwächten Leben in Deutschland.*

General Discussion concerning the best method of insuring lives which, because of some physical imperfection, are not acceptable for insurance at the usual rates.

GERMANY:

Discussion of paper by Mr. Eggenberger: *Ueber die Herstellung von Invaliden-Sterbetafeln.*

HOLLAND:

Discussion of paper by Mr. Janse: *On the Question of Health Insurance from the Practical Point of View, including Tables.*

Discussion of papers separately on the History of Health Insurance:

BELGIUM:

Paper by Mr. Duboisdenghien: *L'assurance contre la maladie en Belgique.*

GREAT BRITAIN:

Paper by Mr. Watson: *Sickness Assurance by Friendly Societies in Great Britain.*

UNITED STATES:

Paper by Mr. Messenger: *Health Insurance in the United States.*
General Discussion concerning Health Insurance.

THURSDAY, SEPTEMBER 3, 10 A.M.

Discussion of papers separately on the Growth of Life, Health, and Accident Insurance, Annuities, Pensions, and other Operations requiring Actuarial Advice:

AUSTRALIA:

Paper by Mr. Carment: *Life Assurance in Australasia.*
Paper by Mr. Eedy: *Industrial Life Assurance in Australasia.*
Paper by Mr. Trivett: *Friendly Societies in New South Wales.*

BELGIUM:

Paper by Mr. Lembourg: *Développement de l'Assurance Vie, Assurance dite "Assessment," Sociétés Fraternelles, Assurances contre les Accidents, Assurances garantissant la Responsabilité civile des Patrons, Assurances contre la Maladie, Capitaux Différés, Rentes Viagères, Pensions de Retraite pour la Vieillesse, Pensions d'Ouvriers, et toutes autres opérations nécessitant l'avis des Actuaires: ce que l'on peut constater en Belgique.*

CANADA:

Paper by Mr. Blackadar: *On the growth in Canada of Life Insurance, Assessment Insurance, Friendly Societies, Accident Insurance, Employers' Liability Insurance, Health Insurance, Pure Endowment Business, Annuity Business, Old Age Pensions, Workmen's Pensions, and other operations requiring Actuarial Advice.*

GERMANY:

Paper by Mr. Lindemann: *Das Wachstum der deutschen Lebensversicherung.*
Paper by Mr. Meyer: *Die Entwicklung der deutschen Arbeiter-Versicherung.*

GREAT BRITAIN:

Paper by Mr. Brabrook: *The Progress of Provident Institutions in the United Kingdom.*
Paper by Mr. Chatham: *On the growth of Life Insurance, Assessment Insurance, Pure Endowment business and Annuity business.*

Paper by Mr. W. R. Strong: *The growth of Accident and Employer's Liability Insurance in Great Britain.*

Paper by Mr. Woods: *Old Age and Workmen's Pensions in Great Britain and Ireland.*

JAPAN:

Paper by Mr. Aso: *On the growth of Life Assurance in Japan.*

Paper by Mr. Awadzu: *Growth of Assessment Insurance in Japan.*

UNITED STATES:

Paper by Mr. Fackler: *Report for the United States of America on the growth and progress of Institutions and Conditions requiring Actuarial Advice.*

General Discussion concerning the Development of the Functions of the Actuary, Past and Future.

THURSDAY, SEPTEMBER 3, 2:30 P.M.

Discussion of papers separately on University Instruction upon Actuarial Subjects:

CANADA:

Paper by Mr. Sanderson: *On the Instruction given in Canadian Universities on Actuarial Subjects.*

FRANCE:

Paper by Mr. Picquet: *De l'instruction donnée en France sur les sujets traités par les actuaires.*

GERMANY:

Paper by Mr. Manes: *Vorlesungen über Versicherungs-Wissenschaft an deutschen Hochschulen.*

Paper by Mr. von Bortkiewicz: *Ueber versicherungsmathematischen Unterricht an den Universitäten.*

GREAT BRITAIN:

Paper by Mr. Young: *On the Instruction given in Universities on Actuarial subjects.*

SWITZERLAND:

Paper by Mr. Moser: *Notiz betreffend den Unterricht der Versicherungs-Wissenschaft auf der Universität.*

UNITED STATES:

Paper by Mr. De Boer: *On Instruction given in Universities and Colleges on Actuarial Subjects.*

General Discussion on University Instruction.

Discussion on papers separately on the Protection of Wives and Children against Claims of Creditors:

AUSTRALIA:

Paper by Mr. Duckworth: *The Protection of Life Policies against the Claims of Creditors.*

CANADA:

Paper by Mr. Goldman: *Existing Legislation for the Protection of Wives and Children, as Life Insurance Beneficiaries, against the Claims of Creditors.*

FRANCE:

Paper by Mr. Cosmao-Dumanoir: *Note sur les dispositions de la législature française relatives à l'assurance sur la vie au profit de la femme et des enfants.*

Paper by Mr. Lefort: *Des lois actuellement en vigueur pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance sur la vie, contre les réclamations des créanciers.*

GERMANY:

Paper by Mr. Moldenhauer: *Schutz der Frauen und Kinder als begünstigte Personen in der Lebensversicherungs-Police.*

GREAT BRITAIN:

Paper by Mr. Phelps: *On existing Legislation for the Protection of Wives and Children, as Life Assurance Beneficiaries, against the Claims of Creditors.*

HOLLAND:

Paper by Mr. J. van Schevichaven: *Ueber die Rechte der begünstigten Frau und Kinder aus der Lebensversicherungs-Police, speziell den Gläubigern des Kontrahenten gegenüber.*

SPAIN:

Paper by Mr. Maluquer y Salvador: *Lois actuellement en vigueur en Espagne pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance-vie, contre les réclamations des créanciers.*

UNITED STATES:

Paper by Mr. Lewis: *Laws Protecting Life Insurance against Creditors.*

General Discussion on the Protection of Wives and Children against Claims of Creditors.

FRIDAY, SEPTEMBER 4, 10 A.M.

AUSTRIA:

Discussion of note by Mr. Blaschke, and concerning the best method of carrying out his suggestions: *On the best plan for preparing and publishing Government Statistics concerning Dangerous Occupations and the Mortality therein.*

GERMANY:

Discussion of paper by Mr. Harms-Tiepen: *On the best plan for preparing and publishing Government Statistics concerning Dangerous Occupations and the Mortality therein.*

HOLLAND:

Discussion of paper by Mr. S. R. J. van Schevichaven: *Das Abschliessen der Bücher von Gesellschaften, welche Versicherung in verschiedenen Ländern betreiben.*

SWEDEN:

Discussion of paper by Mr. Lundgren: *Ueber die Hauptbestimmungen der neuen schwedischen Versicherungsgesetze.*

UNITED STATES:

Discussion of paper by Mr. Dawson: *Valuation, in Actions for Damages for Negligence, of Human Life Destroyed or Impaired.*

UNITED STATES:

Discussion of paper by Mr. Moir: *Relationship of Initial Expenses and Selection to Valuation.*

General Discussion of proposed methods of calculating policy reserves with allowance for initial expenses, such as the methods of Messrs. Zillmer and Sprague, and of Mr. Dawson, described in Mr. Moir's paper.

FRIDAY, SEPTEMBER 4, 2:30 P.M.

Discussion of papers separately on the Province of State Supervision of Life Insurance Companies:

BELGIUM:

Paper by Mr. Maingie: *Du contrôle par l'Etat des entreprises d'assurances privées.*

GERMANY:

Paper by Mr. Manes: *Die Staatsaufsicht über die Lebensversicherungs-Gesellschaften in Deutschland, wirtschaftliche und juristische Grundsätze.*

GREAT BRITAIN:

Paper by Mr. Chisholm: *On the Province of State Supervision of Life Insurance Companies.*

General Discussion on the Province of State Supervision of Life Companies, whether

(1) Confined to securing publicity; or
(2) Securing publicity and solvency; or
(3) Securing publicity and solvency, and suppressing practices which violate the principles of equity; or
(4) Securing publicity and solvency, and taking part in the determination of methods before their adoption by companies.

Discussion générale relative au contrôle de l'Etat sur les compagnies d'assurances sur la vie; s'il doit s'exercer:

(1) Uniquement en vue d'assurer la publicité; ou

(2) En vue d'assurer à fois la publicité et la solvabilité; ou

(3) En vue d'assurer la publicité et la solvabilité et de supprimer toutes les pratiques qui enfreignent l'équité; ou

(4) En vue d'assurer la publicité

General-Diskussion über das Gebiet der staatlichen Kontrolle von Lebens-Versicherungs-Gesellschaften, entweder

(1) Nur um Oeffentlichkeit zu gewährleisten; oder

(2) Oeffentlichkeit und auch Solvenz zu gewährleisten; oder

(3) Oeffentlichkeit und Solvenz zu gewährleisten und auch Handlungen zu unterdrücken, welche die allgemeinen Grundsätze der Gleichberechtigung verletzen; oder

et la solvabilité et de contribuer à déterminer les différentes méthodes avant leur adoption par les compagnies.

(4) Oeffentlichkeit und Solvenz zu gewährleisten, und an solchen Beschlussfassungen von der Gesellschaft teilzunehmen, welche ihre Geschäfts-Methoden betreffen.

Discussion of papers separately on the Technical Principles which should be Observed in State Supervision:

GERMANY:

Paper by Mr. Broecker: *Die Bedeutung des Prämienreservefonds nach dem deutschen Privatversicherungsgesetze.*

Paper by Mr. Schönwiese: *Die allgemeinen technischen Grundsätze, welche bei der staatlichen Kontrolle der Lebensversicherungs-Anstalten im Hinblick auf die Internationalen Interessen des Versicherungswesens zu beachten sind.*

SWITZERLAND:

Paper by Mr. Rosselet: *Forme donnée en Suisse au contrôle de l'Etat sur les Sociétés d'Assurances sur la Vie.*

Paper by Mr. Trefzer: *Die technischen Grundsätze, welche bei der staatlichen Kontrolle zu beobachten sind.*

General Discussion on the Technical Principles which should be Observed in State Supervision.

SATURDAY, SEPTEMBER 5, 10 A.M.

CLOSING SESSION.

Discussions deferred from previous sessions, if any.

Observations by members on other subjects.

Choice of place and time of meeting of the Fifth International Congress of Actuaries.

Miscellaneous business connected with the closing of the Congress.

At some appropriate point, the President will resign the chair to the Honorary President, who at the end of the proceedings will declare the close of the Congress.

SÉANCE DE CLOTURE.

Débats renvoyés, s'il en existe, des précédentes séances.

Observations diverses de Membres du Congrès.

Epoque et lieu de réunion du Cinquième Congrès International des Actuaires.

Détails relatifs à la clôture du Congrès.

A un moment donné, Monsieur le Président abandonnera le fauteuil à Monsieur le Président d'Honneur, lequel, à la fin des débats, déclarera close la session du Congrès.

SCHLUSS-SITZUNG.

Diskussion über etwa vorhandene Themata aus früheren Sitzungen.

Bemerkungen von Mitgliedern über andere Gegenstände.

Wahl von Platz und Zeit für den nächsten Internationalen Kongress.

Vermischte Angelegenheiten verbunden mit dem Schlusse des Kongresses.

Uebergabe des Vorsitzes durch den Präsidenten an den Ehrenpräsidenten, welcher den Schluss des Kongresses erklärt.

JOURNAL

JOURNAL

The sessions of the Congress were held in the rooms of the American Fine Arts Society, No. 215 West 57th Street, New York.

MONDAY, AUGUST 31, 1903.

A.M.

The members of the Permanent Committee in attendance took their places on the platform and at ten o'clock the Congress was called to order by the President, Mr. Lepreux.

The Permanent Committee was represented by the following named members:

PRESIDENT

MR. LEPREUX.

VICE-PRESIDENTS

MR. AWADZU, of Japan,
DR. HAHN, of Germany,
MR. HUGHES, of Great Britain,
MR. MCCLINTOCK, of the United States.

SECRETARIES

DR. MANES, of Germany,
MR. PIERSON, of the United States,
MR. WOODS, of Great Britain.

MEMBERS

MR. GUNN, of Great Britain,
MR. QUIQUET, of France,
MR. DE SAVITCH, of Russia.

The President, Mr. Lepreux, then delivered the following address:

Messieurs—Il y a trois ans, le troisième Congrès International d'Actuaires réuni à Paris, accueillait, avec enthousiasme, la proposition de choisir New-York comme le siège du Quatrième Congrès International. Le Comité d'Organisation, présidé par M. Pierson et administré par M. Tatlock, a poursuivi avec une activité et une persévérance auxquelles je me plais à rendre publiquement hommage, l'accomplissement de sa tâche, rendue plus ardue par la lenteur, la difficulté inévitables des communications. Grâce à lui, grâce à vous, Messieurs, qui avez répondu avec tant d'empressement à son appel, à l'appel du Comité Permanent, le Quatrième Congrès International va s'ouvrir sous les auspices les plus favorables.

Il marquera, j'en suis convaincu, une nouvelle étape franchie dans la voie qu'indiquait avec tant d'autorité, en 1895, un homme que nous saluons toujours en cette circonstance solennelle, comme on salue un soldat tombé au champ d'honneur, MAHILLON.

Le Quatrième Congrès mettra bien en lumière, comme ses devanciers, le caractère philosophique élevé de la Science Actuarielle, le rôle important qu'il faut réserver à l'Actuaire, non-seulement dans la technique même de l'assurance, mais encore dans l'organisation et le fonctionnement de grandes institutions par lesquelles certains Etats s'efforcent d'arriver, plus rapidement, à la paix sociale. En ce moment, je me souviens des mémorables paroles prononcées au Congrès de Paris par M. le Ministre du Commerce Millerand, lorsque, après avoir évoqué les problèmes sociaux qui se dressent devant les Gouvernements, il serait vain de vouloir les résoudre sans le concours de l'actuaire.

C'est à vous, Messieurs, qu'il appartient de réaliser ce programme. Dans les discussions qui vont s'ouvrir, vous apporterez non-seulement votre savoir, votre expérience, mais encore le soin de la Justice et de la Vérité, cette ardeur vers le bien commun qui gran-

Gentlemen—Three years ago the Third International Congress of Actuaries, assembled in Paris, welcomed enthusiastically the motion to select New York as the place of meeting of the Fourth International Congress. The Organizing Committee, presided over by Mr. Pierson and administered by Mr. Tatlock, has, with an activity and perseverance to which I take pleasure in paying public tribute, pursued the accomplishment of its task, rendered more arduous by the inevitable slowness and difficulty in transmitting the communications.

Thanks to it, thanks to you, gentlemen, who have so promptly responded to its appeal, to the appeal of the Permanent Committee, the Fourth International Congress is about to open under the most favorable auspices.

It will mark, I am confident, a new station on the road indicated with so much authority, in 1895, by a man whom we always solemnly salute on an occasion like this, as we revere the memory of a soldier fallen on the field of honor—MAHILLON.

The Fourth Congress will fully demonstrate, like its predecessors, the exalted philosophical character of actuarial science, the important part that must be reserved for the actuary, not only in the technics of insurance, but also in the organization and operation of the great establishments through which certain states are striving to bring about, more rapidly, social peace. At this moment I recall the memorable words delivered at the Congress of Paris by the Minister of Commerce, M. Millerand, when, after having evoked the social problems to be faced by governments, he declared it futile to want to solve them without the co-operation of the actuary.

It is your task, gentlemen, to carry out this programme. To the discussions which are about to begin, you will bring not only your knowledge, your experience, but also that regard for justice and truth, that ardor for the common welfare, which makes man

dissent l'homme en élevant sa pensée par-dessus les préoccupations de l'existence. Ainsi poursuivis dans la sérénite qui est un des plus beaux attributs de la Science, vos travaux seront réellement utiles et la Science actuelle en sortira plus honorée encore que dans le passé.

En vertu des pouvoirs que me confère ma qualité de Président du Comité International Permanent, je déclare ouvert le Quatrième Congrès International d'Actuaires.

appear greater by raising his thoughts above the preoccupations of his existence. Thus pursued with the serenity which is one of the most beautiful attributes of science, your labors will be truly useful, and real knowledge will issue from them still more honored than in the past.

In virtue of the power conferred upon me in my capacity of President of the International Permanent Committee, I declare open the Fourth Internationl Congress of Actuaries.

The President, Mr. Lepreux, then announced that the Congress would proceed to its organization by the election of its officers and, on his nomination, Dr. Israel C. Pierson and Mr. John Tatlock, the President and Secretary of the Actuarial Society of America, were respectively elected President and General Secretary of the Congress, the latter taking his seat upon the platform.

At the request of the President of the Permanent Committee the General Secretary then read the regulation of the Congress pertaining to the Vice-Presidents and Secretaries, and a recess was taken to enable the members present from the different countries to choose their representatives for these offices.

The following named were elected as Vice-Presidents and Secretaries of the Congress for the respective countries as indicated:

Country.	*Vice-President.*	*Secretary.*
BELGIUM,	AMÉDÉE BÉGAULT,	FLORIMOND HANKAR.
CANADA,	T. B. MACAULAY,	A. K. BLACKADAR.
FRANCE,	ALBERT QUIQUET,	H. DUPLAIX.
GERMANY,	DR. FERDINAND HAHN,	DR. ALFRED MANES.
GREAT BRITAIN, AUSTRALIA, NEW ZEALAND,	WILLIAM HUGHES,	ERNEST WOODS.
HOLLAND,	DR. J. H. PEEK,	J. F. WESTERBERG.
SWEDEN, NORWAY,	SVEN PALME,	A. PALMSTRÖM.
AUSTRIA, HUNGARY, ITALY, JAPAN, MEXICO, RUSSIA, SWITZERLAND,	SERGE DE SAVITCH,	PROF. ULISSE GOBBI.
UNITED STATES,	RUFUS W. WEEKS,	DANIEL H. WELLS.

The Vice-Presidents and Secretaries having taken their seats upon the platform, the President of the Permanent Committee announced the formal organization of the Congress and introduced the Honorary President of the Congress, the Honorable George B. Cortelyou, Secretary of the Department of Commerce and Labor in the United States Government, who delivered the following address:

MR. PRESIDENT AND GENTLEMEN:

"I account it a high honor and privilege to have a part in the exercises of this great International Congress. With ever-increasing interest I have learned of the work you have done and of the work you expect to do, and it gives me peculiar pleasure to address the members of an organization which is so intimately in touch with modern thought and progress, and which has for its concern subjects that relate so vitally to our common welfare. On behalf of the Government and people of the United States and speaking especially for the Actuarial Society of America, not alone its membership in this country, but the other branches of the Society so worthily represented by our friends and neighbors, the delegates from the Dominion of Canada, I extend to you a most cordial greeting. It is a happy circumstance that this Fourth International Congress of Actuaries should be held on the American Continent and in its metropolis.

"The great nations here represented have responded most cordially to an invitation most cordially extended. As your hosts, we have looked forward to this gathering with the hope and the purpose of making it worthy to take its place with the meetings that have preceded it, and if you do not find on every hand the evidences of our deep interest, it is because we have fallen short in our efforts to make this occasion an expression of our sincere good will and our friendly hospitality.

"In such an assemblage I shall hardly attempt to make more than a brief allusion to certain historical aspects of your work, but I am sure you will pardon me if I touch upon some of the features which show its scope and its helpfulness to mankind. And you will remember, too, that on this occasion I am speaking not only *to* you but *for* you.

"While insurance may have been known to the ancients, its principal development has been during late years through the exigencies of modern commerce. In the beginnings of mercantile dealings men were unable financially, as individuals, to bear great losses. They learned that in the division of risks among large numbers personal losses would be small. From this mutual practice in respect to losses that would otherwise have fallen heavily upon each came insurance on commercial lines, and, as has been well said, to-day no prudent person engages in any large business enterprise, dealing either in building, transportation, or manufacture, who does not seek shelter under a policy of insurance. It originated probably in the insurance of ships; it has been carried to almost every industry subject to losses through the act of man or the elements.

"Annuities are of great antiquity. Life insurance, so called, was a mere wager between one man and another until the first permanent life company was organized. This, I am informed, was the Amicable Society, which lasted something over 161 years, after which its business was taken over by another office. The oldest life company was established in 1756 and still exists in London.

"The first permanent life company in this country—one of the great institutions whose officials are numbered in your gathering to-day—began business in 1843, followed at comparatively short intervals by other equally representative companies, which also through individual membership participate in your deliberations.

"We are told in the chronicles that deal with such matters that in ancient Rome the name actuary was given to the clerks who recorded the *acta publica* of the Senate, and also to the officers who kept the military accounts and enforced due fulfillment of contracts for military supplies. The first mention of the word in law is said to be in the Friendly Societies Act of 1819, where it is used in the vague sense, 'actuaries, or persons skilled in calculation.' It has been used with precision since the establishment of the 'Institute of Actuaries of Great Britain and Ireland,' in 1848, and 'The Faculty of Actuaries in Scotland, founded at Edinburgh in 1856, and incorporated by royal charter in 1868.

"The Institute of French Actuaries and similar societies in Germany, Belgium, and other nations, have taken their place in the ranks of this great body of scientific workers and have had and now have worthy representation in your meetings.

"The Actuarial Society of America was organized in the spring of 1889. While it is young in years you have undoubtedly found it not only active and alert, but ready at all times to undertake and measure up to every requirement of its older and more experienced colleagues.

"'In modern times,' says a recent writer, 'the actuary is the mathematician of an insurance company, who makes the calculations on which its policy, plans, and prices are based, and applies the doctrine of probabilities to fire, life, or accident insurance. Although the material on which he works is theoretically furnished by the experience of his and other cognate companies, and the records of public and private bodies, with the common rules of interest, in fact it needs not only great mathematical capacity, but great practical sagacity to apply them to actual business; and no actuary of the highest class is a mere mathematician.

"'In the early days, when experience was still mostly to make, the actuaries were usually the presidents of their companies. In recent times a safe body of experience has accumulated which enables business men to head them, and the actuary's computations and advice relate to slighter variations or special plans. In accident companies the actuary needs to be, and usually is, a man of large practical acquaintance with different employments, their hazards, the meaning of given employment names, and those under which the more hazardous employments are disguised as less so; in fire insurance equally he must know the character of different risks.'

"It must be a source of satisfaction to you, as it is a matter of great interest to one who for the first time makes a critical study of your requirements, that membership signifies high attainments and admitted professional standing.

"Your Congress in many particulars occupies a unique position. First, the subject-matter of your deliberations is primarily scientific, based in fact upon what may be termed a distinct branch of applied mathematics. Second, it embraces in its wide scope the professions of law and of medicine, and its discussions contemplate the consideration of formal contracts and questions allied to various divisions of sanitary science. Third, the relation of this subject-matter, which has the attention of the Congress, to these academic subjects has to do in a most striking way with the great world of finance, and is intimately connected with financial institutions that are among the most potential of our modern economic factors; for these great institutions include not only those of life insurance, but the savings fund and the pension offices, and similar agencies which on the continent of Europe are in so many cases governmental institutions. Fourth, it is altogether probable and within the realm of safe statement to say that rarely, if ever before, has there met in this country a body of thinkers and workers more representative of the alliance of academic theory with the application of the principles of the learned professions to diversified interests which occupy a commanding position in the business and industrial world. This means for the Congress great responsibility and great influence.

"Gentlemen, your relation to all material conditions of life is fortunate, for you stand on the high plane of impartiality; you recognize in the broadest sphere of your calculations neither race, nor class, nor creed; you encourage thrift; you are the friend of the toiler as well as of those in high places of power and affluence; you carry light and cheer and comfort and hope into the earth's dark places. You stand for things that make for stability. You are the architects of firm foundations upon which rise institutions whose helpfulness is far-reaching and incalculable. Your study is life, and the extent of your influence is only equalled by its beneficence.

"And so I can and do most heartily congratulate you upon the character of your high calling and upon the splendid results that have thus far marked the progress of your work. I would, however, lose sight of what is perhaps the greatest good accomplished by these international meetings if, in referring to the scope of your duties and their relations to the actuarial science, I should forget to mention and to emphasize another and a wider influence exerted by such congresses. In all walks of human endeavor competition is keen, and the struggle for position and profit among individuals and among nations is active and unflagging. If the competition is directed into right channels, if such meetings as this, international in their character, bring together representatives from many countries for mutual interchange of thought and opinion on subjects of general interest, even though in many instances members are competitors, who can doubt their helpfulness and their trend toward better feeling?

"Like other organizations of abundant vitality and healthy growth, you will undoubtedly develop in your meeting sharp and persistent rivalry of thought and suggestion. But it will be on so high a plane that we shall all be great gainers by your deliberations. Let us have such rivalry, not only in your chosen profession but in the wider field of international commercial relations. The wholesome activity that springs from the right sort of competition is a guaranty of political peace among the nations of the world. The improved acquaintance which these meetings make possible as to both men and methods is one of the best safeguards against irrational jealousies. You meet upon common ground; you touch elbows in a common cause. The many really small differences disappear in the broad discussion of themes that enlist a common sympathy and support. There follows naturally and inevitably the great result of an increased knowledge of the subjects pertinent to your work, and of the mettle and merit of the men who devote their time and energy to the advancement of a science which finds to-day such fitting representation in the distinguished gathering it is my pleasure to address.

"I am glad indeed to greet you, not only as the representative of the Government, but of the Department of Commerce and Labor, which is fortunate in participating at the beginning of its career in so representative and noteworthy a meeting as this Congress. The officials of the new Department will watch your proceedings with great interest, for the more fully we study the scope of the law which created it, the more clearly appear the points at which our work touches the interests which you represent.

"You have chosen wisely in your designation of these meetings as a Congress. They are in the broadest sense representative—representative of the thought and progress of the nations whose delegates you have assembled. From your discussions and deliberations will come new principles and new methods in the science to which you are devoted, but greater and more beneficent than these will be the silent influences that spring from the good fellowship and better understanding fostered in the friendly meeting of representatives of many of the world's great powers."

At the conclusion of his address Mr. Cortelyou read the following communication from the President of the United States:

"Oyster Bay, N. Y., August 22, 1903.

My Dear Mr. Cortelyou:

I am peculiarly sorry to be unable to accept the invitation to be present at the opening of the Actuarial Congress. This congress has international significance, and few gatherings of business men are more important to the business welfare not only of this country but of all the nations represented. The bodies included in your gathering occupy a position of such leadership in the several communities from which they come that all considerations affecting their well-

being are also of moment to our nation no less than to the other civilized nations of the globe. The importance of the meeting is very great, and to this importance I am fully alive. I am very sorry that I am unable to be present in person. Please express my congratulations and good wishes, as well as my regret at my absence, to the assembled bodies.

Sincerely yours,

THEODORE ROOSEVELT.

HON. GEO. B. CORTELYOU,
Honorary President,
Fourth International Congress of Actuaries."

The President of the Permanent Committee made a brief acknowledgment, on behalf of the Congress, of the sentiments expressed by the Honorary President and for the courtesy extended by President Roosevelt.

The President of the Permanent Committee announced that, on the invitation of the Permanent Committee, the designation as Honorary Vice-Presidents of the Congress for their respective countries had been accepted by members of the Ministries thereof, as follows:

AUSTRIA—VON KOERBER, *President of the Council of Ministers.*

BELGIUM—COUNT DE SMET DE NAEYER, *President of the Council of Ministers, Minister of Finance and of Public Works.*

FRANCE—TROUILLOT, *Minister of Commerce.*

GERMANY—COUNT VON POSADOWSKY-WEHNER, *Imperial Secretary of State for the Interior.*

ITALY—BACELLI, *Minister of Agriculture and of Commerce.*

GRAND DUCHY OF LUXEMBOURG—EYSCHEN, *Minister of State.*

SPAIN—DATO, *Minister of Justice.*

SWEDEN—WESTRING, *Minister of the Interior.*

The President of the Permanent Committee read the communications of acceptance of the Honorary Vice-Presidents and Mr. Weeks, Vice-President of the Congress for the United States, offered a resolution that these acceptances be received by the Congress, with thanks for the honor conferred. The resolution, being duly seconded, was put to a vote and unanimously carried.

The President of the Permanent Committee then introduced Dr. Israel C. Pierson as the elected President of the Fourth International Congress of Actuaries.

President Pierson assumed the chair and addressed the Congress as follows:

"We are now organized as the Fourth International Congress of Actuaries. Our membership comprises men who are prominent in the domain of Actuarial Science. It includes official delegates of many Governments which foster and supervise one of the greatest and most beneficent of modern economics; members of many Actuarial Institutes and Societies whose object is to promote the science of life contingencies; Actuaries connected with many companies which are engaged in the practical application of this Science and have accumulated billions of dollars in reserve funds for the benefit and protection of the multitudes of lives which they have insured in every part of the civilized world. While it is a high privilege to be a member of this assembly, to be chosen to preside

over its deliberations is a great honor, and I thank you with all my heart, my dear colleagues, for conferring this honor upon me by electing me President of this Congress.

"The Organizing Committee and the members of the Actuarial Society of America are under great obligation to the United States Government for the patronage and support so cordially given to this Fourth International Congress of Actuaries. In the name of the Society I express sincere thanks to the Government and to the Secretary of the Department of Commerce and Labor, Hon. George B. Cortelyou, who has been personally interested in the preliminary arrangements, and, as the representative of the United States Government, has kindly consented to accept the office of Honorary President.

"We gratefully appreciate the courtesy manifested by the governments of foreign countries in according their patronage, and we extend our hearty thanks to them and to their government officials who have been good enough to allow the use of their names as Honorary Vice-Presidents.

"Much is due to the Permanent Committee on International Congresses of Actuaries, and especially to the President, Mr. Lepreux, and to the General Secretary, Mr. Bégault, for their untiring devotion to the duties of their respective offices, and for their enthusiastic efforts in behalf of this Congress, and we are gratified that they are present to assist at its opening. We are also indebted to the Correspondents of the Permanent Committee and of the Organizing Committee for their valuable aid. In the name of the Actuarial Society of America, I beg them all to accept our most cordial thanks.

"That so many distinguished Governmental and Actuarial Delegates are our visitors is the cause of a gratification which it is difficult to conceal, but I cannot refrain from saying that the Actuarial Society of America is moved by a peculiar sense of filial pride and pleasure by the presence of so many representatives of the mother of us all, to assist in an event which is interesting, particularly to one of her children, and I may name William Hughes, President, Henry W. Manly, Past-President, and other officers of the Institute of Actuaries, London. With somewhat kindred pride and pleasure we are delighted that the Faculty of Actuaries in Scotland is represented by N. B. Gunn, President, and by James Meikle, the venerable member and Past-President of the Faculty.

"It is an honor that the Third International Congress of Actuaries cordially accepted our invitation to hold the Fourth International Congress of Actuaries in the City of New York, and, considering the wideness of the oceans and the broadness of the lands, it is a compliment that so many of our friends have traveled such great distances to be our guests. We do not forget, however, that the underlying motive in taking these long journeys is to take part in these proceedings and to obtain the benefits which it is the purpose of these Congresses to confer.

"Most heartily I endorse the cordial words of welcome which our Honorary President has spoken. We are very happy to grasp again the hands and to look once more into the eyes of those whom we have had the pleasure of meeting at previous Congresses, and we are glad to make the acquaintance of those who are present for the first time. The Actuarial Society of America says to every one of you, Welcome to America, and to our hospitality. We welcome you as friends and brothers to this comparatively new country, where you will find many things different from those in other lands, as to the works of nature and the works of man and as to general conditions and customs, and we venture to hope that your visit will be attended with enduring pleasure and profit to you.

"Our American systems of life insurance were based on the science and experience which already had been established or had reached an advanced stage of evolution in some of the European countries notably in Great Britain. In our systems there may be no superiority, there may be defects. We trust that the

discussions will be a benefit to us in these regards and perhaps profitable also to everyone.

"It is a matter of deep regret that of those who have participated in previous Congresses many are unable to attend this assembly, among whom I may mention the Presidents and other officers of the 2d and 3d Congresses, Messrs. Young, Guieysse, Marie, Higham, Samwer, Lindstedt, Blankenberg, and others. It is a regret that we may not have the pleasure of their personal presence and the benefit of their assistance in the discussions, nevertheless we greet them in spirit and hope for a reunion in the future, perhaps in 1906. Mr. Blankenberg, in a letter, expressed sorrow that he could not attend the Congress, but he sent his cordial greetings and said that the opening of the Congress on the birthday of their much beloved queen, Wilhelmina, is a coincidence very pleasing to the Hollanders.

"Some of the members or interested adherents of the previous Congresses have ceased from their labors since the reunion of 1900 in Paris. The limitations of our time prevent the mention of their names, but we recall our former colleagues in delightful memory. I may be permitted, however, to speak of one who was a member of the Actuarial Society of America, and so far as is known, was the oldest member of the entire Actuarial Fraternity, both as to years of age and as to years of service, Mr. William E. Starr. Born March 1, 1812, he became the Actuary of the State Mutual Life Assurance Company in 1848, and dying January 13, 1903, he was nearly 91 years old, and had been 55 years engaged in Actuarial work. He attended every meeting of the Actuarial Society, was a faithful councillor, and was deeply interested in all the proceedings in which he often participated. It may be said of him and of many of those whom we miss from our local or International Councils, including our first President, Mr. Mahillon:

"'Their ears are deaf to human praise,
Their lips, to mortals, mute.
But still their words deep echoes raise,
Their thoughts have endless fruit.'

"When in June, 1894, Mr. Léon Mahillon, then Director of the Government Department of Life Insurance, advocated the employment of the services of an Actuary in a life insurance measure which was under discussion in the Belgian Assembly, a deputy said 'Qu'est-ce qu'un Actuaire? Je n'en ai jamais vu.' Mr. Mahillon had encouraged Mr. Amédée Bégault in the work of translating into the French language Mr. George King's 'Text Book of the Institute of Actuaries,' which work was completed and published in 1894 with an elaborate introduction written by Mr. Mahillon. Being already impressed with Mr. Bégault's convictions that uniformity of symbols in Actuarial Science was a necessity, Mr. Mahillon was aroused by the remark of the Deputy, 'What is an Actuary? I never have seen one,' and thereupon decided that he would endeavor to convene Actuaries from all countries to consider the vital questions of Actuarial Science; to obtain uniform notation in the Science; to popularize life insurance theories and disseminate information concerning them among legislators and others; and to emphasize the office and the work of the Actuary. He secured the patronage of the Belgian Government and the assistance of the Minister of Finance for the consummation of his plan to convene a Congress of Actuaries. Other Governments and Actuarial Institutes and Societies were invited to send delegates and the first International Congress of Actuaries was held on September 2-6, 1895, in the 'Palais des Academies' Brussels. The Minister of Finance, Mr. de Smet de Naeyer, representing the Belgian Government, as the Honorary President, in his opening address, extended a cordial welcome to the delegates and explained briefly the object of the Congress. Mr. Mahillon was chosen the effective President, and

'to him is due the almost miraculous organization and consummately skilful guidance of the First International Congress of Actuaries.' So successful was this First Congress as to attendance and interest that it was decided to hold one in each third year thereafter.

"The Second Congress was held May 16-20, 1898, in 'Staple Inn Hall,' London, under the auspices of and in celebration of the Jubilee Year of the 'Institute of Actuaries.' Mr. Thomas E. Young, President of the Institute, was chosen President of the Congress.

"The Third Congress occurred June 25-30, 1900, in the 'Palais de l'Economie et des Congres de l'Exposition Universelle,' Paris, under the patronage of the French Government, the Minister of Commerce, Mr. Millerand, as representative of the Government, being the Honorary President. The President of 'l'Institut des Actuaires Français,' Mr. Paul Guieysse, was chosen President of the Congress.

"The Permanent Committee on International Congresses of Actuaries was established at Brussels in 1895, to be a bond between the Actuaries and Associations in various countries; to prosecute investigations pertaining to Actuarial Science; to publish periodically a journal of events and of original contributions; and to co-operate with Organizing Committees in the preparation of the work of International Congresses. The first President was Mr. Mahillon, who was succeeded at his death by Mr. Omer Lepreux. Mr. Amédée Bégault has always been the General Secretary. This Committee has rendered most useful and beneficial services and should be cordially supported.

"It is impossible to measure or enumerate the results and benefits of the International Congresses of Actuaries. Some of them are: the establishment of a well-nigh universal medium of communication between Actuaries; conferences on subjects of common interest; organization of actuarial societies in Belgium, Germany, Holland, Italy, Austria and Japan; publication of Actuarial periodicals, and investigations and exact observations into particular mortality experiences.

"Since the meeting of 1900, in Paris, three independent and extensive mortality investigations have been completed. Two of them will be considered in the discussions of this Congress.

"The 'Institute of Actuaries' and the 'Faculty of Actuaries' Joint Mortality Investigation was undertaken in 1895. It is derived from the data of 1863 to 1892 inclusive, furnished by forty-one British Companies and three American Companies which contributed their British experience. The results of these investigations, including the experience on a large number of annuitants and of insured lives, have been completed and published in sections from 1899 to the present time and are considered as standards for the future. The Actuarial profession owes a debt of gratitude to Mr. Ralph P. Hardy, by whose presence here we are pleased and honored, Chairman of the Joint Committee, and to Mr. T. G. Ackland, Superintendent of the tabulations and the entire clerical work.

"The Committee of the three French Companies, 'Assurance Générale,' 'Union' and 'Nationale,' have finished their Tables of Mortality of Annuitants and of Lives Insured. They embrace the experiences of these Companies to January 1, 1900, and add very valuable observations to their formerly published results, especially as to annuitants in what is known as the R. F. table. The committee presented the first results to the Universal Exposition in April, 1900. Their completed work, published in 1902, is a royal octavo volume containing 375 pages and many charts arranged and printed in excellent form. The Committee, Messrs. H. Duplaix F. Oltramare and A. Quiquet, are entitled to the grateful acknowledgments of Actuaries everywhere.

"The fourth question considered at the Actuarial Congress in Paris in 1900 was 'Comparison of the rates of mortality in various occupations.' Mr. McClintock presented a paper 'On Special Investigations for the Comparison of Death Losses by occupation or otherwise.' The English version of that paper was read

at the next meeting of the Actuarial Society of America, October 25 and 26, 1900. The subject, and the comprehensive method of treating it, so impressed the members that on motion a Committee was appointed, consisting of Messrs. Emory McClintock, B. J. Miller, J. G. Van Cise, R. W. Weeks and D. H. Wells, to consider the matter and to report to the next meeting of the Society. Mr. John K. Gore was subsequently added to the Committee. At the meeting of the Society on May 16 and 17, 1901, the committee made a full report and presented a complete programme for 'A Specialized Mortality Investigation,' the material to be furnished by the Life Companies of the United States and Canada, whose Actuaries were members of the Society, the work to be entered upon immediately, and the resulting statistics to be published by the Society before the meeting in New York of the International Congress of Actuaries, in September, 1903. Thirty-four Life Companies and the actuaries most cordially approved and assisted in carrying out the plan and furnished the desired data. The completed work makes a small quarto book of 479 pages. A copy of it has been presented to each member, as a souvenir of this Fourth International Congress of Actuaries. These published results of the investigation will be of value to life insurance interests generally and doubtless will be considered a rich contribution to Actuarial Science and Life Insurance Administration.

"I have mentioned briefly some of the benefits which these Congresses have given to Actuarial Science and to Actuaries. There are other advantages attending these conventions which cannot be described in words or be measured by any tangible standard. We meet as devotees to a Science which we magnify, but although convened from all parts of the world we recognize in each other the living man, like ourselves as to attributes of mind and heart, character and purposes, human experiences and feelings, environments and life, and if it were not for these things the science would not exist. We become acquainted and, forgetting geographical lines and political limitations, are friends. May we not hope that these Actuarial Congresses, while they advance Actuarial Science and foster comity and friendliness, will contribute largely to the improvement of social economic conditions and will promote the early advent of that halcyon time, the day of the Universal Brotherhood of man.

"'And when that Brotherhood the world shall fill
And all the nations work its blessed will,
Then, then shall dawn the age so long foretold,
The perfect flower of time, the age of gold.'

"The duties and responsibilities resting upon us are great and the questions before us are numerous and weighty. Since the time allotted for the consideration of these subjects is limited, shall we not give ourselves to the real business of this Congress with zeal, diligence and fidelity, in the confident expectation and with the fixed purpose that by our deliberations and discussions Actuarial Science shall be advanced and we, as well as the many others who will read the printed reports, shall be better prepared to solve the problems, discharge the duties and carry the responsibilities pertaining to the office and the work of the Actuary.

"It is not necessary to ask that you will accord to the President your cordial assistance during this Congress. That favor has already been graciously assured along with the honor which you have so kindly bestowed and which I again most gratefully acknowledge."

The President submitted to the Congress the following cablegrams which, at his request, were read by the General Secretary: From Mr. J. F. L. Blankenberg, Director of *Algemeene van Levensverzekering en*

Lijfrente, Amsterdam: "Cordial wishes for glorious success of Fourth International Congress." From James H. Hyde, Esq., Vice-President of the Equitable Life Assurance Society of the United States: "Regret my absence. Friends and associates doubtless done more than I could. Best wishes success Congress."

The Congress then proceeded to the consideration of the papers prepared by its members on the various subjects proposed for discussion.

The order in which the various subjects were taken up and the papers presented on each subject are indicated in the summaries of the proceedings of each day.

NOTE.—The letters and figures following the title of each paper denote the volume and page in and at which the paper may be found. The volume and page containing the discussion are indicated by the letters and figures set against the title of the subject.

Subject, *The Improvement in Longevity.* II. 105.
Papers.

On the Improvement in Longevity during the Nineteenth Century, by Mr. Warner of Great Britain. I. 1.

La Prolongation de la Vie dans le Dix-Neuvième Siècle aux Pays-Bas, by Messrs. Paraira and Landré of Holland. I. 8.

On the Improvement in Longevity in the United States during the Nineteenth Century, by Mr. J. K. Gore of the United States. I. 31.

The session was closed at 12.45 P.M.

MONDAY, AUGUST 31, 1903.

P. M.

The session was opened by the President at 2.10 P.M., and the discussion was continued. At 3.30 P.M. the President called to the chair Mr. Bégault, Vice-President for Belgium.

Subject, *War Mortality.* II. 124.
Papers.

War Risks, with Special Reference to the War in South Africa, 1899-1902, by Mr. Schooling of Great Britain. I. 56.

The Risk-Rate of the late Chino-Japanese War, by Mr. Schida of Japan. I. 75.

War Mortality in the United States, by Mr. Hann of the United States. I. 80.

Subject, *Mortality among Non-Caucasian Races.* II. 125.
Papers.

Notes on Mortality in India and some other Tropical Countries, by Mr. Thomson of Great Britain. I. 111.

On the Mortality of the Japanese, by Mr. Yano of Japan. I. 123.

Mortality among Non-Caucasian Races, by Mr. A. Hunter of the United States. I. 133.

Subject, *Miners' Experience.* II. 127.
Paper.

Invalidität und Mortalität bei den bayerischen Knappschaftskassen, by Mr. Eggenberger of Germany. I. 145.

The Congress rose for the day at 5.10 P.M.

On Monday evening the members of the Congress and the ladies accompanying them, with other invited guests, attended a reception, given to the Congress by the Actuarial Society of America, at the Fine Arts building. The guests were received by his Honor Seth Low, Mayor of the City of New York, the Honorable George C. Cortelyou, Honorary President of the Congress, and Dr. Israel C. Pierson, President of the Congress.

Tuesday, September 1, 1903.

A.M.

The session was opened by the President at 10.00 A.M.

Mr. Carment, of Australia, addressed the Congress with a message of greeting from the Institute of New South Wales. The discussion of papers was then taken up.

Subject, *The New British Mortality Experience.* II. 129.

Papers.

A Comparison of the O^{M} *Table of Mortality with the adjusted American Table,* by Mr. Hardy of Great Britain. I. 150.

Brief Notes on the British Offices Mortality Experience, 1863-1893, by Mr. King of Great Britain. I. 176.

Subject, *Annuitants' Mortality.* II. 137.

Paper.

Die Sterblichkeit der schweizerischen Rentner, by Mr. Kihm of Switzerland. I. 214.

The session was closed at 12.30 P.M.

Tuesday, September 1, 1903.

P.M.

The session was opened by the President at 2.40 P.M. At 4.10 P.M. the President called to the chair Mr. Quiquet, Vice-President for France.

The proceedings of this session consisted largely of a General Discussion and explanations relative to the work of the Committee of the Actuarial Society of America having charge of its recent investigation into the Experience of Thirty-four Life Companies upon Ninety-eight Classes of Risks. Questions concerning the work of the Committee were responded to by the Chairman, Mr. McClintock. II. 143.

The Congress rose for the day at 5.00 P.M.

On Tuesday evening the members of the Congress and the ladies accompanying them, with other invited guests, including the Mayor of the City of New York, were entertained at dinner at Sherry's by the officers of The Mutual Life Insurance Company of New York, The New York Life Insurance Company and The Equitable Life Assurance Society of the United States. Three hundred guests enjoyed the hospitality of the hosts of the occasion. The programme of the toasts was as follows:

TOASTS.

Chairman,
The Honorable GEORGE BRUCE CORTELYOU,
Secretary of Commerce and Labor
of the United States.

THE PRESIDENT OF THE UNITED STATES:

THE CONGRESS CITIES—BRUSSELS, LONDON, PARIS AND NEW YORK:

Proposed by Mr. Granniss, Vice-President The Mutual Life Insurance Company of New York.

Responded to by Mr. Buls, Burgomaster of Brussels at time of First Congress, and Mr. Low, Mayor of New York City.

THE GOVERNMENTS REPRESENTED AT THE CONGRESS:

Proposed by Mr. Alexander, President, The Equitable Life Assurance Society of the United States.

Responded to by Dr. Eucken-Addenhausen, Delegate of the Imperial German Government, and Mr. Tardit, Delegate of the French Government.

THE ACTUARIAL BODIES REPRESENTED IN THE CONGRESS:

Proposed by Mr. McCall, President New York Life Insurance Company.

Responded to by Mr. Hughes, President Institute of Actuaries, London, and Mr. Lepreux, President Association of Belgian Actuaries and President Permanent Committee of Congresses.

THE LADIES:

Proposed by the Chairman.

Responded to by Mr. Hegeman, President Metropolitan Life Insurance Company.

WEDNESDAY, SEPTEMBER 2, 1903.

A.M.

The session was opened by the President at 10.10 A.M. The discussion of papers was taken up.

Subject, *The Probable Future Course of the Interest Rate.* II. 150.

Papers.

Der wahrscheinliche Lauf des Zinssatzes in der Zukunft, by Mr. Grossman of Austria. I. 239.

Note sur les variations du taux de l'intérêt en Belgique pendant la période contemporaine, by Mr. Hankar of Belgium. I. 345.

The Probable Future Course of the Rate of Interest, by Mr. Burn of Great Britain. I. 352.

Technical Subjects. II. 164.

Papers.

Gemischte Capitalversicherung mit an einem bestimmten Termine erwachsendem unbedingten Anspruch auf Prämien-Rückgewähr, by Mr. Hoppe of Austria. I. 367.

Sur l'emploi simultané de lois de survie distinctes, by Mr. Quiquet of France. I. 382.

Notes on Actuarial Functions, by Mr. Elderton of Great Britain. I. 389.

On the Development of Tables derived from an Abridged Expression for the Calculated Expectation of Future Life, by Mr. Meikle of Great Britain. I. 396.

Theorie der Leibrenten mit Rückvergütung der Baareinlagen abzüglich der bereits bezogenen Renten, by Mr. Dizler of Germany. I. 414.

On a Rational Method of Loading, by Mr. Peek of Holland. I. 434.

The Congress rose for the day at 12.50 P.M.

On Wednesday afternoon, through the courtesy of the Interborough Railway Company, a special train conveyed a number of the members on a trip over the elevated lines. Later in the afternoon the members and the ladies accompanying them, to the number of two hundred and fifteen, journeyed by a special train on the Long Island Railroad to Manhattan Beach. Dinner was served at the Manhattan Beach Hotel and the party was entertained at the exhibition of Pain's Fireworks and later at the theatre at Manhattan Beach.

THURSDAY, SEPTEMBER 3, 1903.

A.M.

The session was opened by the President at 10.15 A.M. The discussion of papers was taken up.

Subject, *Insurance of Impaired Lives.* II. 166.

Paper.

Die verschiedenen Systeme der Versicherung von geschwächten Leben in Deutschland, by Mr. Gunckel of Germany. I. 452.

Subject, *Health Insurance.* II. 178.

Papers.

Über die Herstellung von Invaliden-Sterbetafeln, by Mr. Eggenberger of Germany. I. 458.

On the Question of Health Insurance from the Practical Point of View, including Tables by Mr. Janse of Holland. I. 468.

L'assurance contre la maladie en Belgique, by Mr. Duboisdenghien of Belgium. I. 470.

Sickness Assurance by Friendly Societies in Great Britain, by Mr. Watson of Great Britain. I. 478.

Health Insurance in the United States, by Mr. Messenger of the United States. I. 493.

Subject, *The Growth of Life, Health and Accident Insurance, Annuities, Pensions and other Operations requiring Actuarial Advice.* II. 189.

Papers.

Life Asurance in Australasia, by Mr. Carment of Australia. I. 421.

Industrial Life Assurance in Australasia, by Mr. Eedy of Australia. I. 550.

Friendly Societies in New South Wales, by Mr. Trivett of Australia. I. 572.

Développement de l'Assurance Vie, Assurance dite "Assessment," Sociétés Fraternelles, Assurances contre les Accidents, Assurances garantissant la Responsabilité civile des Patrons Assurances contre la Maladie, Capitaux Différés, Rentes Viagères, Pensions de Retraite pour la Vieillese, Pensions d'Ouvriers, et toutes autres opérations nécessitant l'avis des Actuaires: ce que l'on peut constater en Belgique, by Mr. Lembourg of Belgium. I. 594.

On the Growth in Canada of Life Insurance, Assessment Insurance, Friendly Societies, Accident Insurance, Employers' Liability Insurance, Health Insurance, Pure Endowment Business, Annuity Business, Old Age Pensions, Workmen's Pensions, and other operations requiring Actuarial Advice, by Mr. Blackadar of Canada. I. 604.

Das Wachstum der deutschen Lebensversicherung, by Mr. Lindemann of Germany. I. 614.

Die Entwicklung der deutschen Arbeiter-Versicherung, by Mr. Meyer of Germany. I. 625.

The Progress of Provident Institutions in the United Kingdom, by Mr. Brabrook of Great Britain. I. 656.

On the Growth of Life Insurance, Assessment Insurance, Pure Endowment Business and Annuity Business, by Mr. Chatham of Great Britain. I. 671.

The Growth of Accident and Employers' Liability Insurance in Great Britain, by Mr. W. R. Strong of Great Britain. I. 682.

Old Age and Workmen's Pensions in Great Britain and Ireland, by Mr. Woods of Great Britain. I. 690.

On the Growth of Life Assurance in Japan, by Mr. Aso of Japan. I. 701.

Growth of Assessment Insurance in Japan, by Mr. Awadzu of Japan. I. 703.

Report for the United States of America on the growth and progress of Institutions and Conditions requiring Actuarial Advice, by Mr. Fackler of the United States. I. 708.

At 11.15 A.M. the President called to the chair Mr. William Hughes, Vice-President of the Congress for Great Britain.

At 12.05 P.M. the President resumed the chair.

The session was closed at 1.00 P.M.

THURSDAY, SEPTEMBER 3, 1903.

P.M.

The session was opened by the President at 2.30 P.M.

Subject, *University Instruction upon Actuarial Subjects.* II. 198.

Papers.

On the Instruction given in Canadian Universities on Actuarial Subjects, by Mr. Sanderson of Canada. I. 720.

De l'instruction donnée en France sur les sujets traités par les actuaires, by Mr. Picquet of France. I. 724.

Vorlesungen über Versicherungs-Wissenschaft an deutschen Hochschulen, by Mr. Manes of Germany. I. 727.

Über versicherungsmathematischen Unterricht an den Universitäten, by Mr. von Bortkiewicz of Germany. I. 743.

On the Instruction given in Universities on Actuarial subjects, by Mr. Young of Great Britain. I. 750.

Notiz betreffend den Unterricht der Versicherungs-Wissenschaft auf der Universität, by Mr. Moser of Switzerland. I. 760.

On Instruction given in Universities and Colleges on Actuarial Subjects, by Mr. De Boer of the United States. I. 763.

Subject, *The Protection of Wives and Children against Claims of Creditors.* II. 209.

Papers.

The Protection of Life Policies against the Claims of Creditors, by Mr. Duckworth of Australia. I. 787.

Existing Legislation for the Protection of Wives and Children, as Life Insurance Beneficiaries, against the Claims of Creditors, by Mr. Goldman of Canada. I. 808.

Note sur les dispositions de la législature française relatives à l'assurance sur la vie au profit de la femme et des enfants, by Mr. Cosmao-Dumanoir of France. I. 829.

Des lois actuellement en vigueur pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance sur la vie contre les réclamations des créanciers, by Mr. Lefort of France. I. 836.

Schutz der Frauen und Kinder als begüngstigte Personen in der Lebensversicherungs-Police, by Mr. Moldenhauer of Germany. I. 842.

On existing Legislation for the Protection of Wives and Children, as Life Assurance Beneficiaries, against the Claims of Creditors, by Mr. Phelps of Great Britain. I. 850.

Über die Rechte der begünstigten Frau und Kinder aus der Lebensversicherungs-Police, speziell den Gläubigern des Kontrahenten gegenüber, by Mr. J. van Schevichaven of Holland. I. 854.

Lois actuellement en vigueur en Espagne pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance-vie, contre les réclamations des créanciers, by Mr. Maluquer y Salvador of Spain. I. 868.

Laws Protecting Life Insurance against Creditors, by Mr. Lewis of the United States. I. 873.

At 3.20 P.M. the President called to the chair, Mr. Sven Palme, Vice-President of the Congress for Sweden and Norway.

At 4.12 P.M. the President resumed the chair.

The Congress rose for the day at 5.10 P.M.

On Thursday evening the members of the Congress and the ladies accompanying them, with other invited guests, were entertained at a Reception and *Musicale* given by the officers of the Metropolitan Life Insurance Company, whose spacious and elegant building on Madison Square was thrown open for this occasion.

The programme of the *Musicale* follows:

PROGRAMME.

SONGS . . . . . SELECTED
Metropolitan Male Quartet

a. BERCEUSE } GODARD
b. SCHERZO } PIATTI
Mr. W. Paulding De Nike, Cellist.

BARITONE SOLO—BEDOUIN LOVE SONG . . . PINSUTI
Mr. Harry T. Burleigh.

POEMS—THE CALIFORNIA POET HUMORIST . . SELECTED
Mr. Fred. Emerson Brooks.

CONTRALTO SOLO—AMOUR VIENS AIDER . . SAINT SAENS
Miss Carrie Bridewell, of the Metropolitan Opera

ACCOMPANIST . . . . . MR. CHAS. L. VAN BAAR

FRIDAY, SEPTEMBER 4, 1903.

A.M.

The session was opened by the President at 10.20 A.M. The discussion of papers was taken up.

Miscellaneous subjects, as indicated by the titles of the papers. II. 217.

Papers.

On the best plan for preparing and publishing Government Statistics concerning Dangerous Occupations and the Mortality therein, by Mr. Harms-Tiepen of Holland. I. 881.

Das Abschliessen der Bücher von Gesellschaften, welche Versicherung in verschiedenen Ländern betreiben, by Mr. S. R. J. van Schevichaven of Holland. I. 888.

Über die Hauptbestimmungen der neuen schwedischen Versicherungsgesetze, by Mr. Lundgren of Sweden. I. 915.

Valuation, in Actions for Damages for Negligence, of Human Life Destroyed or Impaired, by Mr. Dawson of the United States. I. 929.

Relationship of Initial Expenses and Selection to Valuation, by Mr. Moir of the United States. I. 955.

At 11.10 A.M. the President called to the chair Mr. Rufus W. Weeks, Vice-President of the Congress for the United States.

At 12.15 P.M. the President resumed the chair.

The session was closed at 12.35 P.M.

FRIDAY, SEPTEMBER 4, 1903.

P.M.

The session was opened by the President at 2.30 P.M.

Mr. Pokotiloff, of Russia, offered a resolution expressing to Mr. John R. Hegeman and the officers of the Metropolitan Life Insurance Co. the thanks of the Congress for the hospitality shown to its members by Mr. Hegeman and his colleagues. The motion, being put to the Congress, was unanimously adopted.

Subject, *The Province of State Supervision of Life Insurance Companies.* II. 229.

Papers.

Du contrôle par l'Etat des entreprises d'assurances privées, by Mr. Maingie of Belgium. I. 963.

Die Staatsaufsicht über die Lebensversicherungs-Gesellschaften in Deutschland, wirtschaftliche und juristische Grundsätze, by Mr. Manes of Germany. I. 971.

On the Province of State Supervision of Life Insurance Companies, by Mr. Chisholm of Great Britain. I. 1007.

Forme donnée en Suisse au contrôle de l'Etat sur les Sociétés d'Assurances sur la Vie, by Mr. Rosselet of Switzerland. I. 1057.

In addition to the discussion on these papers the programme provided for a general discussion on

The Province of State Supervision of Life Companies, whether (1) *Confined to securing publicity; or* (2) *Securing publicity and Solvency; or* (3) *Securing publicity and solvency, and suppressing practices which violate the principles of equity; or* (4) *Securing publicity and solvency, and taking part in the determination of methods before their adoption by companies.*

Subject, *The Technical Principles which should be Observed in State Supervision.* II. 250.

Papers.

Die Bedeutung des Prämienreservefonds nach dem deutschen Privatversicherungsgesetze, by Mr. Broecker of Germany. I. 1076.

Die allgemeinen technischen Grundsätze, welche bei der staatlichen Kontrolle der Lebensversicherungs-Anstalten im Hinblick auf die Internationalen Interessen des Versicherungswesens zu beachten sind, by Mr. Schöwiese of Germany. I. 1095.

Die technischen Grundsätze, welche bei der staatlichen Kontrolle zu beobachten sind, by Mr. Trefzer of Switzerland. I. 1104.

At 3.40 P.M. the President called to the chair Mr. de Savitch, Vice-President of the Congress for Russia, etc.

The Congress rose for the day at 4.50 P.M.

On Friday evening representatives of the official delegates from the various countries and actuarial societies taking part in the Congress, together with the members of the Organizing Committee, were entertained at dinner at Delmonico's by William Hughes, Esq., the President of the Institute of Actuaries.

Saturday, September 5, 1903.

A.M.

The session was opened by the President at 10.05 A.M.

At 10.30 A.M. the President called to the chair Mr. Lepreux, the President of the Permanent Committee.

The discussions still unfinished, on subjects presented at previous sessions, were completed.

At 11.20 A.M. the President resumed the chair.

The President, in a brief address, expressed his thanks to the members, officers and assistants of the Congress and surrendered the chair to the Honorary President.

Mr. Ireland (of the United States) offered a resolution of thanks to the Vice-President and Train-Master of the Interborough Railway Co. for the courtesies shown by them to the members of the Congress on September 2nd, and, on motion duly seconded, the resolution was unanimously adopted.

Dr. Ferdinand Hahn (of Germany) then spoke as follows:

Vom deutschen Verein fuer Versicherungs-Wissenschaft, an dessen Spitze zu stehen ich zur Zeit die Ehre habe, ist mir der Auftrag geworden, diesem Kongress die herzliche Einladung zu unterbreiten, den naechsten Kongress in Deutschland, und zwar in der deutschen Reichshauptstadt Berlin abzuhalten.

Der deutsche Verein fuer Versicherungs-Wissenschaft ist swar noch jung an Jahren, aber er hat in der kurzen Zeit seines Bestehens alle wissenschaftlichen Kraefte, welche in Deutschland, sei es im Amt, sei es auf dem Lehrstuhl, oder in der Praxis zu finden sind, in sich zu vereinigen gewusst; er hat Macht und Kraft und Ansehn im Vaterlande und darueber hinaus gewonnen, und er darf es wohl unternehmen, nach dem glaenzenden Verlauf der bisherigen Kongresse die Herren zum fuenften Kongress zu sich einzuladen; und er darf die Zuversicht hegen, dass mit Hilfe des Comité Permanent und der gern gewaehrten Foerderung der deutschen Reichsregierung er imstande sein wird, den naechsten Kongress so auszurichten, dass er sich sowohl in-

By the German Society of Insurance-Science, at the head of which I have the honor to be at present, I have been commissioned to convey to this Congress the cordial invitation to hold the next Congress in Germany, in the capital of the German empire, Berlin.

Although the German Society for Insurance Science is young in years, it has, during the short period of its existence, succeeded in uniting within its bounds all the scientific authorities to be found in Germany, whether in office, in the professor's chair, or in practical life; it has won power and strength and reputation in the fatherland and beyond it, and it may well venture, after the brilliant course of the Congresses hitherto held, to invite you to its home, to the Fifth Congress, and it may feel confident that, with the aid of the Permanent Committee and the willingly granted assistance on the part of the German Imperial Government, it will be able to arrange the next Congress in such a way that it will worthily follow its precursors, with regard to its scientific and practical

bezug auf seine wissenschaftlichen und praktischen Ergebnisse, als auch in seinem aeusseren Verlauf den vorangegangenen wuerdig anschliessen kann.

Und so wiederhole ich denn nochmals die herzliche Einladung, den naechsten Kongress in Berlin abzuhalten.

results as well as in its outward course of procedure. Thus I repeat the cordial invitation to hold the next Congress in Berlin.

Mr. Hardy (of Great Britain) asked if the invitation to meet in Berlin was intended to cover only a meeting of the Actuarial Congress, or whether other scientific and professional bodies were to be included in the meeting.

Dr. Hahn replied as follows:

Selbstverstaendlich ist die Einladung gerichtet auf die Abhaltung eines Aktuar-Kongresses, welcher abgehalten werden wird genau nach den Bestimmungen des Comité Permanent.

It goes without saying that the invitation is for the meeting of a Congress of Actuaries, to be held strictly in accordance with the regulations of the Permanent Committee.

Dr. S. R. J. van Schevichaven (of Holland) gave notice that it is the purpose of the Society of Directors of the Dutch Life Insurance Companies to invite the Sixth Congress to meet in Amsterdam.

On motion, duly seconded, the invitation extended by Dr. Hahn to hold the Fifth Congress in Berlin was unanimously accepted, the date of meeting to be decided by the Permanent Committee.

Mr. Hughes (of Great Britain) proposed a resolution that, after the meeting of the Congress in 1906, the intervals between the successive Congresses be extended from three years to five years. After discussion it was decided that this resolution be taken up by the Fifth Congress, after discussion of this question by the Permanent Committee.

Dr. Eucken-Addenhausen (of Germany) spoke as follows:

Wenn ich noch einmal wage Ihre Aufmerksamkeit zu konzentrieren, so geschieht es nur deshalb, weil ich ueberzeugt bin, dass das was ich sagen werde, bei Ihnen allen freudige Zustimmung finden wird.

Wir haben den Herren Beamten des Kongresses unseren Dank ausgesprochen, wir haben all' den Gesellschaften, die uns so ausserordentlich freundlich entgegengekommen sind, wir haben der Presse gedankt und unserem Bureau; aber wir haben noch nicht gedankt der Stadt, in der wir uns alle sowohl gefuehlt haben, der Stadt, deren erster Buergermeister uns hier empfangen hat, der auf dem Diner bei Sherry uns namens seiner Stadt bewillkommnet hat. Ich schlage vor, auch der gastlichen Stadt New York fuer ihre Gastfreundschaft unseren Dank auszusprechen.

If I venture once more to claim your attention, it is done only because I am convinced that what I am going to say will meet with your cheerful assent.

We have expressed our thanks to the officials of the Congress, we have thanked all the companies that have met us with such extreme cordiality, we have thanked the press and our board of officials, but we have not as yet thanked the city in which we all have felt so much at home, the city whose mayor has received us here, and who at the dinner at Sherry's welcomed us in the name of his city. I propose to express our thanks also to the hospitable city of New York for its hospitality.

The remarks of Dr. Eucken-Addenhausen were unanimously approved.

Mr. Douglas H. Rose (of the United States) spoke as follows:—

I think it proper for us to acknowledge the hospitality of the three companies who extended to us courtesies in giving us the dinner on last Tuesday evening, and also the gracious hospitality of the Metropolitan Life Insurance Company, and perhaps I may add one name that has not been mentioned to-day, although the officers have been thanked in general. I do not think that we ought to forget the labors of our Treasurer, Mr. Welch.

The remarks of Mr. Rose were unanimously approved.

Honorary President Cortelyou:

Before bringing the Congress to a close I want to extend a very cordial invitation to the officials and members of the International Congress of Actuaries to visit Washington and inspect the workings of the technical parts of the Department of Commerce and Labor, and particularly visit the Bureau of the Census and study its plans for the better development of the Federal Statistics, and its method of handling those statistics, in which the use of electrical typewriting machines has been applied.

I may add, of course, that the invitation extends to the entire government service in the City of Washington. We shall be very glad to have any of you come there, or all of you together.

As the time has come for the closing of the business meetings of the Congress, I avail myself of the opportunity of expressing again my pleasure at having been permitted to participate in your proceedings, and of sharing with you the very agreeable duties that have devolved upon me. Speaking for myself, personally and officially, I extend the most hearty good wishes for the future of the societies which you represent, and for the advancement of the cause which has enlisted your best energies.

Not farewell, gentlemen, but till we meet, good-bye.

I now declare the Fourth International Congress of Actuaries closed.

The closing banquet of the Congress took place at Delmonico's on Saturday evening. President Pierson presided and the toasts were responded to as indicated in the following programme:

TOASTS.

1 *The President of the United States.*

2 *The Fourth International Congress of Actuaries.*
Responses by Honorary President and M. Serge de Savitch, Delegate from Russia.

3 *The Permanent Committee.*
Responses by its President and Secretary.

4 *The Oldest Life Office—The Equitable of London.*
Response by its Manager Mr. Manly.

5 *The Mother Society—The Institute of Actuaries.*
Responses by its President and Mr. Ralph P. Hardy.

6 *The Sister Societies.*
Responses by the President of the Faculty of Actuaries of Scotland and M. Albert Quiquet.

7 *The Fifth International Congress of Actuaries.*
Responses by Dr. Ferdinand Hahn, President of the German Society for Insurance Science, and Dr. Alfred Manes, Secretary of the Society.

On the morning of Monday, September 7th, the members of the Congress, with their ladies and other invited guests, including the Honorary President and the other officers of the Congress, participated in an excursion on the steamer "City of Troy." The party was taken down the harbor and up the East River as far as North Brother Island and returning the steamer proceeded up the Hudson River to West Point, which was reached at four o'clock P.M. The party was received by Col. A. L. Mills, the Superintendent of the Military Academy, and after visiting the public buildings of the Post and witnessing the evening dress parade of the Battalion of Cadets the party returned to the steamer, which during the night proceeded to Albany.

On Tuesday morning the party visited the Capitol and in the rooms of the Insurance Department were received and welcomed by the Hon. Francis Hendricks, Superintendent of Insurance of the State of New York. Luncheon followed at the Fort Orange Club where the party was received by George H. Thatcher, Esq., president of the Club, assisted by Mrs. Thatcher and other ladies of Albany.

In the afternoon a portion of the party returned to New York by special train and the other members journeyed westward to Niagara Falls. From that point, in pursuance of a plan arranged by the Canadian members of the Actuarial Society, they made a trip through Canada, enjoying at Toronto and Montreal the hospitality of the officers of the principal life companies of those cities.

DISCUSSION

DISCUSSION

Subject, *The Improvement in Longevity.*

Papers.

On the Improvement in Longevity during the Nineteenth Century, by Mr. Warner of Great Britain.

La Prolongation de la Vie dans le Dix-Neuvième Siècle aux Pays-Bas, by Messrs. Paraira and Landré of Holland.

On the Improvement in Longevity in the United States during the Nineteenth Century, by Mr. J. K. Gore of the United States.

MR. C. L. LANDRÉ (Holland) :—

L'Institut des Actuaires Néerlandais a invité M. le Dr. Paraira et moi de nous charger de l'étude de la longévité aux Pays-Bas pendant le dix-neuvième siècle. En acceptant cette invitation il nous semblait ne pouvoir mieux faire que de donner un aperçu des tables de mortalité construites d'après les recensements et les cas de décès selon les registres de l'état civil. Nous avons exclu les tables pour les provinces ou des groupes de villes, nous croyions devoir nous borner à la population entière, mais il nous semblait nécessaire de considérer les sexes à part. Nous regrettons l'impossibilité de remonter jusqu'au commencement du dix-neuvième siècle: il n'a pas été construit de table de mortalité pour cette période. C'est pourquoi nous avons ajouté les tables de Lobatto pour la seule ville d'Amsterdam, puisque ce sont les tables les plus anciennes du siècle passé aux Pays-Bas.

Nous offrons trois tables comparatives, savoir: les probabilités de décès d'âge en âge, le nombre de survivants à chaque âge de cent mille nouveaux-nés et la vie moyenne pour tous les âges.

On an invitation of the Dutch Actuarial Society, Dr. Paraira and I have answered the question concerning the change in the mortality during the nineteenth century in the Netherlands.

We thought to do best by giving a review of the mortality tables constructed by means of the censuses and the deaths occurred between the data of the enumeration, and taken from the registers of the Civil Department. We have chosen the tables of the whole population, not those of provinces or groups of towns, but we kept the sexes separately; we thought this to be of great importance. We are very sorry that we could not go back to the beginning of the nineteenth century, since a mortality table for the first part of the century has not been constructed. For that reason we have included the tables for the city of Amsterdam only, constructed by Dr. Lobatto, these being the oldest Dutch tables of the nineteenth century.

We have thought that three kinds of tables ought to be given: the probabilities of dying, the numbers of survivors on each anniversary of birth of

C'est le Dr. Paraira qui a dessiné les représentations graphiques dès nombres de survivants et de la vie moyenne, dont notre rapport est accompagné.

Surtout les représentations graphiques sont propres à donner une idée claire de l'amélioration de la longévité pendant les périodes entre les recensements.

On observera qu'en général l'augmentation de la vie moyenne est un peu plus grande et plus régulière pour le sexe masculin que pour le sexe féminin, de sorte qu'à cet égard on peut constater quelque rapprochement des deux sexes.

Il y a deux faits qui méritent une attention particulière; d'abord, l'âge pour lequel la vie moyenne est un maximum a changé pendant le cours du temps; d'environ cinq qu'il était, il est devenu 2 à 3 ans, grâce surtout à la diminution de la mortalité des enfants en bas âges.

Puis la représentation graphique des nombres de survivants montre clairement à quel âge la moitié des nouveaux-nés est éteinte par la mort selon les diverses observations. On voit ainsi, que la vie probable des nouveaux-nés est augmentée pour le sexe masculin d'environ 35 à environ 57 années; pour le sexe féminin d'environ 39 à environ 61 années, de sorte que pour les deux sexes l'augmentation est d'environ 22 années.

Je finis par dire que M. Paraira m'a prié de vous témoigner son regret de ce qu'il lui était impossible d'être présent ici, et je suis bien sûr que vous et moi le regrettons également.

hundred thousand simultaneously born, and the average duration of life. The numbers living and the average duration of life for each age have been represented graphically, the curves being drawn by Dr. Paraira. The curves are joined to our report, while the copies of the photographs are shown here.

The graphical representations give a clear idea of the continual improvement which the rate of mortality has undergone and also of the increase of average duration of life which is dependent upon the mortality. We observe that generally the increase of the average duration of life has been greater and more regular for the males than for the females, so that the difference between the mortality of the two sexes has been diminishing.

Two facts are still to be pointed out; in the first place, we see that the maximum of the average duration of life has been displaced during the course of the years from about five to about two or three years, in consequence of the diminished mortality especially in the first years of life. It is also to be observed, and it is very clearly shown on the graphical representation, at what ages half of the simultaneously born have died out according to the different tables. We see that the probable after-life-time of the just born has, in the course of the time, improved for the male sex from about 35 to about 57 years; for the female sex from about 39 to about 61 years, so that the increase for both sexes is about 22 years.

Before ending, I have still to express the feeling of regret of Dr. Paraira for being prevented to be present at this congress, with which feeling I most sincerely sympathize.

Mr. Ralph P. Hardy (Great Britain):—

Those of us in this room, who appreciate the value of Mr. Gore's work, will, I am sure, share in the deep note of regret at the inadequacy of the data he was compelled to put to use. But we rejoice at the vigorous and so largely successful effort he has made to show that in this direction the United States is pursuing investigations into these questions. Let us hope that, under the direction of its scientific advisers, the

mortality of this great country may be reduced to the level observed in all other civilized countries.

Apart from that, so far as the character of this examination is concerned, may I invoke Mr. Gore's support to say that we must not wait until what is called the public conscience is enlightened, but we must do that which we know is right and proper, relying entirely upon ourselves and endeavoring in each generation to keep posted and record those results which are to be deduced from such material as can be gathered. For a model on the lines of which these investigations should be pursued, I ask if one could adopt a better standard than that exemplified in the data which the Actuarial Society of America has just published to the world.

MR. GEORGE KING (Great Britain) :—

The three papers before us are upon a most interesting and important subject, and one which the general public consider as very easily dealt with. But my own view is that the more one studies statistics from the point of view brought out in these papers, the more difficult of determination the true facts become.

Mr. Gore says: "The title of this paper assumes that there has been an increase in longevity in the United States during the last hundred years, although unfortunately it is not possible to prove absolutely that such is the case." That is true not only in America, but wherever statistics are gathered, and the reason is twofold. In the first place, all statistics are not collected in the same way. In the second place, when they have been collected, they are treated in different ways which makes it very difficult to institute comparisons.

This fact is well shown by the comparison of mortality tables. The various mortality tables of the United Kingdom were formed in many different ways, and we cannot compare the Northampton Table with the Farr Table, because we know that the Northampton Table was absolutely erroneous in its method of construction; although the unlearned are very apt to compare the mortality of the Northampton Table with the mortality of Dr. Farr's tables and say, "What a great improvement there has been."

I am not acquainted with many of the tables referred to by Messrs. Paraira and Landré, but I fear that the same differences occur there, and with that in view we cannot be sure that we have any real facts as to the diminution in the rate of mortality.

Mr. Warner speaks of the British annuity tables and quite rightly says we cannot judge much from them as a basis. The British Offices tables are based upon the experience of the past thirty years, up to the end of 1893, and the government tables refer to a much earlier date, but there are reasons that make these scarcely comparable. One reason concerns the annuitants themselves. Many annuities are bought by executors who wish to close up estates and distribute the property, and they buy government annuities without much reference to the health of the lives involved. That is not the practice in dealing with the companies, and the consequence is that Self-Selection is much more evident in annuities sold by companies than in the government annuities, and therefore the improvement shown by the British Offices tables over the government tables cannot all be traced to real improvement in the mortality of the population.

There is one curious feature shown by the annuity tables, namely,

for males under seventy the improvement is greater and for females over seventy it is less. It is difficult to say why there should be that divergence, but possibly it is that the mortality among females at the higher ages is so low already, there is not much room for further improvement.

We want simultaneous figures in order to ascertain if there has been an improvement in mortality. We do not find it easy to get simultaneous figures. But I submit that the Select Tables of the Institute of Actuaries, and the Select Tables of the British Offices are the nearest approach to such figures that we can have, and I therefore call attention to the table No. 12 in my paper, prepared for this Congress, wherein I give the number of survivors according to Mr. Hardy's method by various tables.

It will be found that there is an improvement of about five per cent. in the numbers of survivors in the British Offices tables over the Institute of Actuaries tables, and that, I think, is the nearest attainable approach to proof of the fact that mortality has improved during the past century.

The British Offices tables are constructed from the mortality of thirty years, ending in 1893; the Institute of Actuaries tables cover an unknown period ending with 1863, so that we really have two successive periods affording two tables constructed practically in the same way, and which, therefore, give us a rough measure of the improvement. When the next great investigation of mortality experience is taken up, the material should be divided into say two sections of twenty years each, so that we can then compare the mortality of the two sections investigated by the same processes, and the result will be useful as an indication of the progress of the rate of mortality.

Mr. J. G. Van Cise (United States):—

There is a very general impression in the United States that there has been a very considerable increase in the average duration of human life. We are considering the question now before us with that belief as a foundation. I think the papers presented show that there has been an increase, but the increase has come mostly from a decrease in the mortality of children. I do not think that the figures stated in these papers show anything else or give any reason to believe that there has been any noticeable increase among adults.

These papers, especially Mr. Warner's, show that adult life is about the same as it formerly was, and therefore there is no reason to think that the rates of insurance should be decreased.

One interesting fact brought out is that the duration of female life is greater than that of male life. This gives reason to believe that life insurance companies ought to take females at as low rates as males, if they exercise the same care in selection.

Mr. Emory McClintock (United States):—

The papers before us have treated this question in gross, *taking the average.* There is another and more important question, whether any individual to-day has a greater expectation of life than the same individual would have had many years ago.

As to that, we all believe that he has a greater expectation of life. We have no figures to prove it, but we firmly believe it. If we assume

the average expectation to be stationary, these apparently contradictory results are easily explained if we also assume at any particular age that the proportion of the population which consists of lives not quite so vigorous as the rest is greater than it was a hundred or fifty years ago. A greater proportion of poorer lives may, if there is a greater real expectation of life for each class, give the same average expectation for the whole.

Now, to illustrate this, suppose in a given population, at a certain age, there were ten persons living years ago—we can use ten as well as ten million—of whom five, of weak constitutions, had an average expectation of 20 years; that makes 100 future years of life for those persons. Suppose the other five, of strong constitutions, had an expectation of 30 years, on the average; that makes 150 years of life for those persons. The whole ten then had 100 plus 150, making 250 future years of life; that is, an average of 25 years for each person. Now, suppose that at the present time the weaker ones on an average have an expectation one year longer, 21 years; suppose that the stronger lives have an average expectation one year longer, namely, 31 years; everyone having an expectation one year longer. But now, in ten persons there are six of weak constitutions and only four of strong; then you have it this way: Six persons with an expectation of 21 years, total years of life, 126. Four persons with an expectation of 31 years, total years of life, 124. The sum for the ten persons is 250 years of life; and the average 25 years, the same as before, and yet every man of a given constitution has one year greater expectation of life.

Dr. Alfred Manes (Germany):—

Es ist leider nicht moeglich gewesen, aus Deutschland ebenfalls einen Bericht ueber die Verlaengerung der Lebensdauer in der kurzen Zeit, welche gegeben war, einzuliefern. Es sind mir aber vor einigen Tagen vom Kaiserlichen Statistischen Amt in Berlin einige, gerade jetzt auch im Druck erschienene Mitteilungen zugegangen; und ich glaube, dass diese Daten auch den hier anwesenden deutschen Herren noch nicht bekannt sind, sodass es also von allgemeinem Interesse ist, sie mitzuteilen. Diese Daten, welche ich der Liebenswuerdigkeit des Herrn Regierungsrat Professor Dr. Zahn verdanke, gehen freilich nicht weit zurueck, weil wir eine deutsche Reichsstatistik erst seit wenigen Dezennien haben.

In diesem Bericht wird gesagt:

"Das Wichtigste in dieser Uebersicht sind die Relativzahlen, welche in Prozent angeben, wie viel von den Lebendgeborenen bestimmter Kalenderjahre bei der Volkszaehlung 1880, 1890 und 1900 noch gezaehlt werden konnten. Fast durchweg sind diese Prozentsaetze

It was unfortunately impossible to submit, within the short time allowed, a report from Germany on the increase in longevity. I have received, however, a few days ago, from the Imperial Statistical Office, several notices that have just appeared in print; and, as I believe that these data are not as yet known to the Germans present, this communication will be of general interest. These data, for which I am indebted to the kindness of Regierungsrat Professor Dr. Zahn, do not, of course, go very far back, since German imperial statistics have been collected for only a few decades.

In this report it is said:

"The most important parts of this summary are the relative figures stating the percentage of the births in certain calendar-years which were counted in the census of 1880, 1890 and 1900. Al-

jetzt groesser als 1890 und 1880, worin zweifellos zugleich eine Verbesserung unserer Sterblichkeitsverhaeltnisse zum Ausdruck gelangt. So waren von den Kindern unter 5 Jahren, die in den Jahren 1876 bis 1880 geboren wurden, 72.6% im Jahre 1880 gezaehlt worden; im Jahre 1890 betrug der Prozentsatz fuer die in vorangegangenen Jahrfuenft Geborenen 73.3%, und im Jahre 1900 75.4%. Nur in zwei Faellen ist eine solche Erhoehung des Prozentsatzes nicht vorhanden. Der eine Fall betrifft die Kinder von unter einem Jahre; sie erscheinen 1900 mit einem relativ geringerem Restbestande als die Gleichalterigen im Jahre 1890. Indessen ist die juengste Altersklasse ganz besonders den jeweiligen guenstigen oder unguenstigen Einwirkungen des Geburtsjahres ausgesetzt, und ist daher eine Schwankung in jener Prozentzahl ziemlich naturgemaess. Der andere Ausnahmefall betrifft die Altersklassen 20-25 und 25-30; diese wurden von 1880 bis 1890 infolge der Auswanderung etwas gelichtet, sodass diese Altersklassen 1890 mit etwas geringeren Restbestaenden von Lebenden vertreten sind als 1880.

"*Ob die Lebensdauer der Bevoelkerung sich verlaengert hat, laesst sich aus der guenstigen Bewegung der genannten Prozentsaetze nicht ohne weiteres ableiten,* wennschon sie wertvolle Anhaltspunkte fuer diese Frage bilden. Ein voellig schluessiges Urteil lassen sie schon um deswillen nicht zu, weil sie nicht auch fuer die hoeheren (ueber 50 Jaehrigen) Altersklassen der Untersuchung moeglich ist, da die Nachweise der Lebendgeborenen nur bis zum Jahre 1841 zurueckreichen. Auch waere noch der Einfuss der Ein- und Auswanderung auf jene Bewegung der Zahlenreihen festzustellen. Im uebrigen wird ein ziffernmaessiger Ausdruck fuer die Lebensdauer besser aus den Nachweisen ueber das Alter der Gestorbenen, die erst seit 1901 von Reichswegen gesammelt werden, gewonnen."

Ich ueberreiche die folgende Tabelle, welche ich den "Mitteilungen des Kaiserlichen Statistischen Amtes von 1903" entnehme:

most throughout, this percentage is now larger than it was in 1890 and 1880, while a change for the better in our mortality-statistics is also shown. Thus of the children under five years of age which were born in the years from 1876 to 1880, 72.6 per cent. were counted in 1880. In 1890 the percentage of those born in the preceding five years amounted to 73.3 per cent., and in 1900 to 75.4 per cent. Only in two cases a similar increase in percentage did not occur. One case concerns the children under one year of age; they appear in 1900 with a relatively smaller remainder than those of the same age in 1890. The youngest class, however, is peculiarly exposed to the respective favorable or unfavorable influences of the year of birth, and a fluctuation in that percentage is therefore rather natural. The other exceptional case concerns the classes from ages 20 to 25 and from 25 to 30; these classes were somewhat reduced from 1880 to 1890 owing to emigration, so that they are represented in 1890 with somewhat smaller remainders living than they were in 1880.

Whether the longevity of the population has increased cannot be inferred off-hand from the favorable movement of the percentages quoted, although they constitute valuable points of departure for this question. They do not admit of a definite conclusion even for the reason that the investigation cannot include the older age-classes (over fifty), since the lists of births go back only to the year 1841. Moreover, the influence of immigration and emigration upon the fluctuation of those figures would have to be ascertained. An exhibit by figures with regard to longevity may be obtained much better from the information as to the ages of the deceased, which has been officially collected only since 1901."

I submit the following schedule, taken from the "Notifications of the Imperial Statistical Office of 1903."

In Prozent der Lebendgeborenen wurden gezaehlt:
Percentages of Births were Reckoned as Follows:

	I. Volkszaehlung Census, 1880.	II. Volkszaehlung Census, 1890.	III. Volkszaehlung Census, 1900.
Ueber 1 Jahr	81,5	82,0	81,5
4— 5 Jahre	68,2	68,6	73,4
5—10 "	64,0	65,0	69,5
10—15 "	62,0	62,5	66,5
15—20 "	59,3	59,5	67,5
20—25 "	58,4	56,4	59,0
25—30 "	53,5	52,5	55,4
30—35 "	49,7	41,1	52,4
35—40 "	45,5	47,0	48,4
40—45 "		43,4	46,6
45—50 "		39,7	41,6
50—55 "			37,8
55—60 "			33,0

Meine Ansicht zu der Frage ist, dass man erstens hinsichtlich der Verlaengerung der Lebensdauer zu optimistisch ist; dass man zweitens noch keine genuegend klare Formulierung des Problems geliefert hat, indem bald von mittlerer Lebensdauer gesprochen, bald gefragt wird, ob derselbe Mensch heute laenger leben würde als vor so und so viel Jahren; und dass man drittens den Ergebnissen der gewoehnlichen Statistik eine zu grosse Bedeutung fuer das Versicherungsgewerbe einraeumt.

Mit Sicherheit laesst sich nur die Vermutung aussprechen, dass ein weit groesserer Prozentsatz von neugeborenen Kindern heute laenger leben bleibt als vor 100 Jahren, dass also die Kindersterblichkeit abgenommen hat, und dieser Umstand ist zweifelsohne den Fortschritten der Medizin und der Sozialpolitik zu verdanken. Allein andererseits fehlt es an jeder Feststellung dafuer, dass heute ein groesserer Prozentsatz als beispielsweise vor 100 Jahren in die höchsten Altersstufen, also ueber 60-70 Jahre, kommt. Im Gegenteil scheinen diese Faelle heute seltener einzutreten, und das ist nicht zu verwundern bei der Veraenderung, welche in unserem wirtschaftlichen Leben eingetreten ist. Wenn wir es den Fortschritten der Medizin zu danken haben, dass heutzutage mehr Kinder am Leben bleiben, so scheint mir zweifelhaft, ob dies ein Vorteil fuer die Volkswirtschaft ist; denn das bedeutet, dass heute viel mehr schwache Kinder

My opinion regarding this question is that, in the first place, too much optimism obtains as to the increase in longevity; second, that no sufficiently lucid formulation of the problem has as yet been furnished, since sometimes the average duration of life is spoken of, and sometimes the question is asked if the same individual would live longer nowadays than so many years ago; third, that too much significance for the insurance business is attributed to the results of ordinary statistics.

It may with certainty be surmised only that a much larger percentage of new-born children lives longer to-day than a hundred years ago, that therefore the mortality among children has diminished and this circumstance is undoubtedly due to progress in medicine and social politics. On the other hand, there is nothing to prove that to-day a large percentage than, for instance, a hundred years ago, reaches the highest stages of life, that is, over 60 to 70 years. On the contrary, these cases seem to occur less frequently to-day, and that is not to be wondered at in view of the change that has taken place in our circumstances of life. If we are indebted to the progress in medicine for the fact that nowadays more children are alive, it seems to me doubtful whether this is an advantage from the standpoint of political economy; for it means that to-day many more delicate children, whom nature had condemned to death at the outset, are kept alive artificially; but this progress is scarce-

kuenstlich am Leben erhalten werden, welche die Natur von vornherein zum Tode verurteilt hatte;—aber zur Veredelung unserer Rasse traegt dieser Fortschritt wohl kaum bei.

Was den dritten Punkt anbetrifft, dass man fuer das Lebensversicherungsgewerbe die Ergebnisse der gewoehnlichen Statistik nicht verwenden kann, so ergibt sich die Berechtigung dieser Behauptung teilweise aus dem eben Gesagten. Denn wenn es wirklich prozentual mehr schwache Leben sind als frueher, die zu beobachten sind, so sterben dieselben auch naturgemaess in frueheren Lebensjahren wieder weg, und sind auf alle Faelle ein zweifelhaftes Risiko. Dasselbe kommt aber bei uns in Deutschland umsoweniger in Betracht, als die Kinderversicherung in Deutschland nicht in starkem Masse betrieben wird.

Bei der grossen Wichtigkeit der ganzen Frage aber fuer die Versicherungswissenschaft,—ganz abgesehen von der grossen Bedeutung der Vergleichung der Lebensdauer fuer alle Nationen,—erscheint es mir angebracht, das Thema in Zukunft genauer zu behandeln. Allein um ein brauchbares Resultat zu erzielen, ist es noetig, dass in allen Laendern die Nachforschungen nach ein und demselben Schema vorgenommen werden, und ich stelle daher den spaeter noch genauer zu formulierenden Antrag, eine internationale Kommission fuer diese Untersuchung zu ernennen, und eine nachmalige Behandlung der ganzen Frage auf dem naechsten Kongress eintreten zu lassen.

ly conducive to the improvement of our race.

As regards the third point, that the results of ordinary statistics may not be utilized for the life-insurance business, this assertion can be justified partly from the foregoing. For, if in reality a larger percentage of impaired lives than formerly is to be observed, they naturally die off again at an earlier stage and are at all events a doubtful risk. This, however, is so much the less to be taken into account in Germany, as the insurance of children is not practised there to any great extent.

Considering the great importance of this question for the science of insurance—entirely apart from the great significance to all nations of a comparison of longevity—it seems to me appropriate to treat this theme in future more accurately. To obtain serviceable results, however, it is necessary to pursue the investigations in all countries —according to the same scheme and I therefore make the suggestion—to be afterwards formulated more exactly—that an International Committee for this investigation be appointed and a subsequent discussion of the whole question take place at the next Congress.

Mr. Sven Palme (Sweden):—

Yesterday afternoon I was reading the very interesting papers on the Improvement in Longevity when the thought struck me that the members of the Congress perhaps might take some interest in the question how the Swedish mortality has decreased. The official statistics, *i.e.* the population, especially the mortality statistics, are, I presume, in Sweden older than in any other land, as beginning in 1749. From that year we have very good statistics, *i.e.* the mortality of our population, including a period of about 150 years.

I have drawn up these two tables that will show you the rate of mortality of the inhabitants of Sweden. One of the tables (the graphical reproduction) shows the mortality of the inhabitants as a whole, the rate of all ages, and you will see from it that the mortality has been

continuously decreasing during the last 150 years. At the present moment the two peoples on the Scandinavian peninsula have the lowest rate of mortality in Europe, or only about 16 per mille. The other table shows the mortality at different groups of ages.

It is unnecessary to make any comments upon these two tables, although there could be a great deal to say about them. I only wished to give some statement from Sweden in comparison with the reports already distributed concerning this matter.

MORTALITY PER 1,000 INHABITANTS OF THE AVERAGE POPULATION IN SWEDEN FOR DIFFERENT AGE GROUPS AT 10 YEARS AVERAGE.

	0-10.	10-20.	20-30.	30-40.	40-50.	50-60.	Over 60 years.
1751-1760.....	53.5	6.4	8.7	11.5	16.5	24.2	72.1
1761-1770.....	55.2	6.5	8.8	11.8	16.8	24.5	76.5
1771-1780.....	57.2	8.4	10.4	13.2	18.1	26.3	80.0
1781-1790.....	53.9	7.7	10.0	12.8	17.2	24.8	77.6
1791-1800.....	48.8	5.3	7.6	10.3	15.3	23.5	78.6
1801-1810.....	46.8	7.3	9.9	12.6	17.7	29.9	88.3
1811-1820.....	46.8	5.9	8.6	11.9	16.8	27.4	80.1
1821-1830.....	38.7	4.7	7.8	11.3	16.4	25.7	76.9
1831-1840.....	35.8	4.8	8.0	11.9	16.9	26.8	80.0
1841-1850.....	34.4	4.6	6.7	9.9	14.5	23.6	73.6
1851-1860.....	38.2	5.5	7.2	10.0	14.3	23.4	71.0
1861-1870.....	35.1	4.5	6.4	8.3	12.0	20.3	68.8
1871-1880.....	31.8	4.3	6.6	8.2	10.6	17.2	60.9
1881-1890.....	26.9	4.3	6.1	7.1	9.5	15.1	54.7
Improvement in per cent. from about 1770 to about 1880	53.0	48.8	41.3	46.2	47.5	42.6	31.6

MR. ARTHUR R. BARRAND (Great Britain):—

It may seem hardly worth while to offer a negative criticism, but that is just the criticism that is perhaps needed on the subject now under discussion. It is only by such negative criticism that we can hope to build up the positive results of calculation which will enable us to answer the questions raised in this discussion, and for that reason I wish to point out that even the tests given by Mr. Gore are barely sufficient to enable us to form any true idea as to whether the longevity of the population in general—which I take to be the subject of these papers—has increased.

In the first place the two claims which Mr. King makes for the Twenty Offices Table and the New British Experience, even if we take the selected tables from those experiences, are hardly comparable, and for this reason; the methods of medical selection are rapidly altering and rapidly improving, and it is quite possible that we are comparing two bodies of lives which, having undergone different methods of selection, may be subject to different rates of mortality. But that is not my main objection to the idea that these tables enable us to form some adequate idea of the improvement in longevity. The main objection is this, that these statistics refer only to assured lives, whereas these papers are intended to deal with the population at large. No one would take the

experience on assured lives as representing the real state of affairs prevailing in the general population.

It is quite possible and quite conceivable that, owing to improvements in medical selection and other causes, the assured lives may show an improvement in longevity, and yet, at the same time, owing to the harder conditions of life among a large section of the population, the net result based on the whole population may show a deterioration.

It is quite possible that one part of the population may be, owing to a better medical selection, furnishing fine class of lives to the offices and yet at the same time there may be a great body of the population which is deteriorating so fast as to wipe out all the improvement in the other. The basis of assured lives is therefore not a proper guide as to whether there is an improvement in longevity of the population at large, and therefore we can have no real facts, with regard to the questions raised in these papers, until we can get *reliable* statistics for the whole population.

Mr. John K. Gore (United States) :—

It is a matter of which we are not especially proud that the census returns in the United States have been so unreliable for mortality data. We have nothing back of 1850 and since that time, as my paper states, our reliable data pertain to cities only. It is to be assumed, of course, that there has been an improvement in the mortality rate of the rural population. The United States Census Bureau is now made a permanent institution and is not reorganized every ten years, as heretofore, and it is making every effort to increase what is known as its registration area, so that when the next census is taken reliable data can be had from a very much larger area, including a large rural district. In the future we hope for much better results from the Census work, and while we can never hope to measure, we shall be satisfied, I think, as to the tendency shown.

Mr. Van Cise considers that there has been no improvement in adult mortality. It seems to me that the figures presented in my paper for this country show that for the younger adult ages there is apparently an improvement. Of course, the problem in this country is complicated by the large number of immigrants which readjust our population continually, so that we have no fundamental ground to work upon, making it all the more necessary to bear in mind that my paper refers only to tendencies, not to actual results.

Mr. McClintock's remarks that perhaps out of ten persons chosen at random to-day, six might be classified as of a weaker and four as of a stronger class, while fifty years ago there were five in each class, are of course a mere assumption; but it brings to my mind the question that I was inclined to introduce into my paper, as to whether or not the vitality of the people has increased. My personal opinion is that it has increased somewhat. However, the individual is so cared for in these days by the improvement in surgery and by improved sanitary conditions and regulations, that he is almost forced beyond the point where he would naturally have died. It is a question whether, with all the advantages of sanitary science that we now possess, and the ignorance of medicine in which our forefathers lived, they may not have had a higher degree of vitality than we. One more point; to-day we care much more for human life than was the case a hundred years ago. There is a constant effort made in all civilized communities to lower the death rate. Such was not formerly the case.

Mr. Charlton T. Lewis (United States):—

The question of the influence of civilization upon human mortality has been abundantly discussed, without any satisfactory statistical basis. Nearly a generation ago I spent some months in striving to gather the information then available upon the subject, for the Public Health Association of the United States; but I found that no statistics which were trustworthy existed, sufficient to support a conclusion. In collecting and comparing the information which was accessible, however, I reached a conviction which seems strongly supported by the united results of the papers presented to-day, and I beg to submit it as, at the least, a provisional hypothesis which may be of service in further inquiries.

Writers who have reviewed the subject in a sanguine spirit found their assertion that human life has been greatly prolonged by the influence of civilization, and that its beneficial result has been most marked during the last three generations, upon certain general facts which are familiar. The first is one which has already been repeatedly referred to in this discussion—that infant life is protected in all civilized countries to an extent which was quite unknown a few generations ago. The general elevation of the standard of comfort has done away with many of the hardships to which tender infancy was exposed. The protection of this helpless period of life from pestilence in all its forms, as well as from accident, and the progress of knowledge in the treatment of the diseases of childhood, have had a marked effect upon infant mortality. In some instances, as shown by figures submitted to us to-day, the percentage of deaths during the first year of life has fallen from 48 per 1,000 to 22 per 1,000, and wherever the statistics of infant mortality are preserved we find a diminution, if not so great as this, yet very substantial, and large enough to point to a general conclusion. This reduction of the death rate continues, on the average, through and even beyond the fifth year of life.

The second of these general facts is, that the human race has learned to deal with epidemics of every kind in a more intelligent and effective manner than before. Hygienic measures for their protection have been of far greater importance even than the improvements in therapeutics, but these, too, have contributed their share to the result. Sober historians, whose opinions on many subjects are valuable, have asserted that the simple discovery of vaccination and its general application have added two years to the average life of man in Europe. Without accepting any such extreme assertion as this, it may be confidently affirmed that the practical stoppage of the ravages of great epidemics like smallpox and the plague, and to a large extent of yellow fever, the quarantine regulations of modern times, and the better treatment introduced by modern medical science and surgery, have done very much to reduce the great mortality which formerly resulted from such diseases. Entirely apart from the famous plagues which devastated vast communities, the occasional and local prevalence of epidemic disease was so frequent a century ago, that the immense reduction in the mortality they cause, itself results in an important addition to the average life.

The third general fact relied on is the vast improvement in medical and surgical science in general; that is to say, in the treatment of the sick at home and in hospitals, so great progress has been made that the mortality from particular diseases has been diminished very largely in recent years. The introduction of anæsthetic surgery alone has saved a vast number of lives, and the prophylactic and therapeutic methods which

are daily finding new application to various forms of germ disease have brought about a substantial increase in the number of those who are saved under attacks which would formerly have been fatal.

Such are the fundamental facts on which the belief that there has been a substantial increase in the vitality of civilized mankind is founded. But if we look at these facts together, we find that they all bear one common characteristic. They are alike in this: that each of them indicates, not an addition to the vitality of the strong, but a diminution of the fatalities of the weak. Each of them shows us a force at work in the community by which the great natural law of the struggle for existence and its consequence in the elimination of the feeble and the preservation of the fittest, is counteracted. The weaklings of the human race are kept alive, so that after these forces have exerted themselves, the percentage of the whole population which is of inferior vitality is larger than it was before.

Now whatever the extent may be to which these forces work, the inevitable result of it is pointed out by the principle which Mr. McClintock formulated to us this morning. Follow the workings of these forces through the successive ages of human life, and you necessarily find that the number surviving is greater each successive year than it would have been without these forces. This is true, so long as they are a large element in the entire conditions of life. But this larger survivorship includes an increased element of weakness which must gradually add more and more to the rate of mortality. We shall therefore necessarily come to some age at which the increased survivorship becomes less potent than the decreased vitality—at which, that is to say, the power of preservation of life, exercised alike upon the strong and the weak, is counteracted by the larger percentage of mortality due to the defective average of vitality.

If this view be correct, it becomes of the greatest interest to inquire where the age is found at which the beneficial influence of civilization upon the death-rate ceases to be felt. As far as the statistics submitted to us go towards answering this question, that age is found io be decidedly higher than might have been anticipated from a general view of the circumstances which I have suggested. If we take these statistics together, we shall find that they point to a progressive increase in the value of the expectation of life during the last hundred years, at all ages below 55, and, if the sexes be considered separately, at a considerably higher age in the case of women. It would appear that the deteriorating effect of the weakening of the average by the preservation of the infirm does not, as yet, show itself materially until near the age of 70, although after that age the deterioration which seems to be due to this cause becomes, in Great Britain, very marked indeed, and to some extent also in the United States.

It will be observed that the question of the effect of civilization upon the duration of life has many aspects. The effect which the aggregate forces of civilization may have upon the average expectation of life is entirely independent of any effect which it may have upon the attainable maximum of life. There is no evidence whatever to show that individual cases of extreme old age beyond the limits of tables of mortality are more frequent than centuries ago; nor is there any evidence that the extreme age attained in such cases is greater than it was in former generations. If popular traditions on the subject were credible we should be compelled to believe that men lived longer two, three, of four centuries ago than now. Certain it is that during the last three generations many hundreds of thousands of selected lives have been insured in life insur-

ance companies, and the vital statistics, including dates of birth and death, are more accurately kept for these cases than for any equal number of persons in any other class; yet, of all the insured, it is not known that more than four or five have ever reached the age of 100, and the oldest of these on record, Jacob William Luning, who died thirty years ago in London, was the only one who attained the age of 103. But my personal belief is that the better care and treatment practised in our times upon the feeble aged have had something of the effect which similar care and treatment have had upon feeble infancy, and that when, if ever, accurate statistics upon the subject shall be gathered, it will be found that the very small percentage of any civilized community who attain the age of 100 is still an increasing percentage, and is greater in our day than in any previous period of human history.

Dr. J. H. Peek (Holland):—

Ich meine, dass die Frage ueber die Besserung der Langlebigkeit eine sehr verwickelte ist und dass, wenn jetzt Einigkeit darueber besteht, dass sich die Aussichten fuer ein laengeres Leben fuer die juengeren Lebensalter gebessert haben, doch noch immer die Meinung zu bestehen scheint, dass moeglicherweise die hoeheren Alter heutzutage eine geringere Langlebigkeit haben als frueher. Ich meine, dass die hollaendische Statistik das Gegentheil beweist, dass naemlich auch bei den hoeheren Altern die Lebenskraft sich wesentlich verbessert hat. Wenn das in vielen Laendern anders zu sein scheint, so liegt das wahrscheinlich an der Verwickeltheit der Sache. Wenn man die Sache mathematisch loesen wollte, dann muesste man eigentlich viele Personen gleichen Alters unter gleichen Lebensverhaeltnissen betrachten, sagen wir zu Beginn des Jahrhunderts und am Ende des Jahrhunderts, und sehen, wie der Verlauf der Sterblichkeit bei solchen Personen gewesen ist. Nur wenn die Vertheilung der Einwohner eines Alters nach den Lebensverhaeltnissen waehrend des Jahrhunderts dieselbe geblieben ist, glaube ich, dass wir in den üblichen Statistiken ein getreues Bild von der Besserung der Sterblichkeit bekommen werden. Leider wird das in den meisten Laendern ueberhaupt nicht der Fall sein; ich meine, die Zustaende werden sich noch am besten in Holland gleich geblieben sein, wo die Bevoelkerung seit Jahrunderten in ziemlich guten Verhaeltnissen gelebt hat, und wo die

I think that the question of the increase of longevity is a very complicated one, and that if we now agree that the prospects of a longer life have improved as regards the younger ages the opinion seems yet prevalent that possibly the higher ages show less longevity to-day than formerly. I think that Dutch statistics prove the contrary—namely, that also in the higher age-classes longevity has considerably increased. If this seems to be different from the condition in many other countries, it is probably to be attributed to the complexity of the subject. If the problem were to be solved mathematically, many persons of the same age under the same conditions of life would have to be considered, at both the beginning and at the end of the century, and the course of mortality among them be observed. Only in the case that the distribution of the inhabitants of the same age according to circumstances has remained stationary during the century, I believe that ordinary statistics will give us an accurate impression of the decrease in mortality. Unfortunately, in most countries this is not the case. It seems to me that conditions may be expected to have remained the same most nearly in Holland, where the population has lived in tolerably good circumstances for centuries and where circumstances have reached a certain stage as early as the beginning of the last century.

If, however, we consider a country like Germany, which has made such great progress during the last century,

Verhaeltnisse schon zu Anfang des vorigen Jahrhunderts zu einem gewissen Abschluss gekommen waren.

Wenn wir aber ein Land wie Deutschland betrachten, das so grosse Fortschritte im letzten Jahrhundert gemacht hat, besonders gegen das Ende desselben,—oder Amerika, wo jedes Jahr so viele Einwanderer kommen und die Verhaeltnisse fortwaehrend im Schwanken begriffen sind, so glaube ich nicht, dass man ein treues Bild erhalten wird, sondern dasselbe muss immer getruebt sein; und wenn in den aelteren Lebensjahren keine Besserung der Sterblichkeit wahrgenommen wird in einem Lande, so glaube ich, dass dies in der Veraenderung der Lebensverhaeltnisse im Laufe des Jahrhunderts begruendet ist.

especially towards the end of it, or America, where so many immigrants arrive annually and produce conditions of constant fluctuation, I believe that the impression we receive will not be accurate, but must always be doubtful; and if in a given country no decrease in mortality can be observed in the higher age-classes, I believe that the change in the mean conditions of life in the course of the century is the cause of it.

Dr. James Raffmann (Hungary) :—

Ich habe heute das Vergnuegen gehabt, mit Herrn Gore einige Worte auszutauschen, und ich schliesse mich seiner Meinung vollkommen an. Mit Bezug auf die Verbesserung der Sterblichkeit, so ist sie einzig und allein—wie saemmtliche Statistiken zeigen (staedtische sowohl wie nationale)—eine wirkliche Verbesserung der Sterblichkeit blos bezueglich derjenigen Krankheiten, welche einen epidemischen oder septischen Charakter zeigen; jedoch in den Krankheiten, welche mehr die Verdauung betreffen,—konstitutionelle Krankheiten,—ist sie konstant geblieben oder gewachsen.

Civilisation macht immer etwas schwaecher, nicht widerstandsfaehiger. Wir sehen in Staaten, wo noch eine rueckstaendige Civilisation herrscht, z. B. in Russland, Oesterreich, Ungarn, dass die alten Leute eine relativ sehr gute Sterblichkeit haben. Aber auf der anderen Seite macht die Civilisation die Leute zugaenglicher fuer hygienische Massregeln und Assanirung. Im Osten Europas, wenn eine epidemische oder septische Krankheit vorkam, so hatten die Aerzte ungeheuer viel zu thun, um das Volk dazu zu bringen, dass sie die hygienischen Massregeln befolgten.

I had the pleasure, to-day, of exchanging a few words with Mr. Gore, and I fully share his opinion. As regards the decrease in mortality, it is, as all statistics (municipal as well as national) show, an actual decrease in mortality purely and simply with respect to diseases of an epidemic or septic character, while in maladies affecting more especially digestion—constitutional maladies—it has remained stationary or has increased.

Civilization is always debilitating rather than conducive to a greater power of resistance. We notice in countries with a backward civilization, as for instance, Russia, Austria, Hungary, that there is a relatively small mortality among old people. On the other hand, civilization makes people more accessible to hygienic measures and sanitation. In Eastern Europe, when an epidemic or outbreak of septic disease occurs, the physicians have the greatest difficulty in persuading the people to adopt hygienic measures.

I believe that mortality among children has decreased only in diseases of a septic nature, and that only the thorough observance of all medical precautions with regard to antiseptic treatment, and sanitary improvements

Ich meine, die Kindersterblichkeit hat sich nur in den Krankheiten gebessert, welche septischen Charakters sind, und nur die gruendliche Durchfuehrung aller medizinischen Massregeln in Bezug auf antiseptische Behandlung und die bessere Assanirung der Lebensverhaeltnisse ueberhaupt haben die Verminderung der Kindersterblichkeit verursacht. Das koennen wir statistisch ganz genau verfolgen; und mir liegen hier die Ergebnisse der staedtischen Statistik in Budapest am naechsten. Wir haben in gewissen Bezirken eine Sterblichkeit bis zu 30% gehabt; als man aber anfing, Bezirk auf Bezirk zu canalisiren, besseres Wasser zu schaffen und schrittweise zu assaniren, da kann man Bezirk fuer Bezirk genau verfolgen, wie sich die Sterblichkeit gebessert hat und zwar in demselben Maasse, in welchem die erwaehnten sanitaeren Massregeln getroffen wurden. Dasselbe finden wir in der staedtischen Statistik von Paris. Da wo die Leute gut und bequem wohnen, sterben die Kinder weniger haeufig als da, wo, wie z. B. in Belleville, die Kinder in dumpfen und ungesunden Raeumen schlafen muessen.

Die ganze Ursache der Verbesserung der Kindersterblichkeit liegt nur in den besseren hygienischen Massnahmen der Neuzeit. Ebenso die geringere Sterblichkeit der Frauen gegen frueher welche hauptsaechlich in der heutigen antiseptischen Behandlung der Woechnerinnen begruendet ist.

Ich moechte hier noch eine Bemerkung machen gegenueber dem, was Herr Dr. Manes heute morgen gesagt hat, dass naemlich die Rettung von sonst dem Tode verfallenen Kindern gerade kein Vortheil fuer die Gesammtheit der Menschen sei. Dort, wo die antiseptische Behandlung und die Anwendung allgemeiner hygienischer Massregeln die Sterblichkeit verringert hat, ist sie nichts als eine Abstellung des sozialen Mordes. Wenn Kinder von Bronchitis gerettet werden oder vom Scharlach, woran frueher die Haelfte dahinstarb,—so koennen das spaeter die staerksten Vaeter und Muetter werden.

Aber die ganze Frage hat meines Erachtens mit der Lebensversicherung

in the mode of living in general, have caused the decrease in the mortality of children. This may be minutely traced by statistics, and for me the results of the municipal statistics of Budapest lie at hand. We had in certain districts a mortanty amounting to as much as 30 per cent.; but since we began to put sewers in district after district, to procure better water and to make sanitary improvements step by step, we have ascertained precisely, district by district, that the mortality has decreased in proportion as those sanitary measures have been adopted. We find the same in the municipal statistics of Paris. Where people are well and comfortably housed, the children die less frequently than where, as for instance at Belleville, the children are obliged to sleep in close and unhealthy rooms.

The improved hygienic regulations of modern times are the sole reason for the decrease of mortality among children. Likewise the smaller mortality among women is to be attributed chiefly to the present antiseptic treatment of women in childbed.

I wish to add here a remark to the statement made by Dr. Manes this morning, that the saving of children, otherwise fated to die, was not exactly an advantage to humanity taken collectively. Wherever antiseptic treatment and the application of general hygienic measures have reduced mortality, the result is simply the abolition of social murder. If children now recover from bronchitis or scarlet-fever, of which one-half formerly died, they may afterwards grow up to be the most robust fathers and mothers. But the whole question of the decrease of mortality, however, is in my opinion a hygienic, social measure which has nothing at all to do with life insurance. Civilization renders us less capable of resistance, but only in a smaller degree than our power of resistance is increased by social-hygienic measures. If there is still a great deal to be done in a social aspect, it does not belong to the insurance business, where we must always recognize the fact that those, who to-day live in good social circumstances, deteriorate rather

ueberhaupt nichts zu thun. : Die Verbesserung der Sterblichkeit ist eine hygienische, soziale Massregel, die mit der Versicherung nichts zu thun hat. Civilisation macht uns widerstandsunfaehiger, aber nur in kleinerem Maasse als die Erhoehung unserer Widerstandskraft infolge sozial-hygienischer Massregeln betraegt. Wenn wir auch in sozialer Beziehung noch sehr viel zu thun haben, so gehoert das doch nicht zum Versicherungswesen, wo wir immer darauf gefasst sein muessen, dass diejenigen, die heute in guten sozialen Verhaeltnissen leben, eher schlechter werden, was ihre Sterblichkeit anbetrifft, als besser, und dass die Sterblichkeit hoechstens konstant bleibt.

than improve as regards mortality, and that mortality at best remains stationary.

MR. FREDERICK L. HOFFMAN (United States) :—

There are some points in Mr. Gore's paper which it seems to me are deserving of further discussion. Mr. Lewis already has touched upon some of the more important aspects of the general problem of American longevity as determined or illustrated by the crude death rate for a long period of years. While the title of this paper reads "The Improvement in Longevity During the Century," if we study carefully the chart which is appended to the paper, and in particular the averages for quarter-century periods, we find that the tendency of the crude death rate has been upward during the first seventy-five years rather than the other way; so that in fact the indicated decrease in the American mortality is of comparatively recent date and confined largely to the past twenty-five or thirty years.

It is unfortunate that no successful attempt should have been made to bring together the vast mass of scattered mortality statistics of American cities, extending over a period of many years. There are thousands of official reports on the vital statistics of communities, large and small, which have never been tabulated or subjected to a critical analysis with anything like the required degree of accuracy and ability which only actuarial talent can supply. The only exception is the census of 1870, when Mr. Elliott, as actuary, had charge of the vital statistics. I am sure that if qualified actuarial talent were to take charge of this matter exceedingly valuable results would follow a comprehensive tabulation and critical analysis of all the available American vital statistics extending over a considerable portion of the past century.

The point has been raised that the improvement in longevity has been rather of benefit to the weak, who have been permitted to survive, than that a healthier and more robust type has been produced. I am not in agreement with this view for it does not seem to me necessarily an evidence of physical weakness or unfitness to survive, because large numbers of human beings succumb to the ravages of smallpox, diphtheria, scarlet fever, diarrhœal diseases of infancy, tuberculosis, and other infectious and contagious diseases; nor is it safe to assume that a person of frail physique on that account necessarily represents an inferior physical type. It has been proven time and again that men of this type, but of

a high order of intelligence and moral courage, have survived where a more robust type, or of an inferior mental and moral order, readily fell victims to an unfavorable environment.

One of the principal causes responsible for the continued fall in the crude death rate is the development of a determined public policy in the direction of applied science, to sanitation, and other public health problems. The crude death rate of a city is to-day watched with care and intelligence, not only from year to year but from week to week, and even from day to day, and an enlightened public opinion demands that the waste of life formerly resulting from the unnecessary spread of contagious and infectious diseases shall no longer be. Public opinion and public morality is determined to control the factors responsible for a high death rate, and as this control becomes more and more intelligent it will become more and more effective, and the death rate will be lowered by degrees to an average quite considerably below that which we experience even at the present time.

A word as to the use and value of crude death rates may not be out of place here since the century mortality curve by Mr. Gore is constructed on this basis. Of course, extreme caution is necessary in the use of crude death rates in that entirely erroneous conclusions are easily derived from this, rather inadequate, method in vital statistics. For illustration; our Secretary of War tells us that the death rate of the United States Army in Cuba during the war with Spain was not higher than the death rate of the city of Washington, but it does not require the aid of an actuary to point out the fallacy in this misuse of vital statistics. We are told that the death rate of Havana, Cuba, at the present time is not higher than the death rate of the city of Washington, but we know that a comparison is made of entirely unlike populations, differing radically as to race, age, sex, etc. If these factors are allowed for, and the true death rates are calculated on the basis of race, age, and sex distribution, we shall find that the mortality of Havana is still, and will probably remain for years to come, anywhere from 50 to 100 per cent. higher than the corresponding death rate of the white population of a healthy American city.

Coming back, however, to Mr. Gore's use of the crude death rate, we find, on making a critical analysis of the facts, that the same tendency is exhibited by the corresponding curves of mortality for each of the cities which are included in his summary of American mortality. The occasional exceptions to this general rule are readily explained by epidemics of local origin such as yellow fever, smallpox, etc. It would not be difficult to draw fifty curves for fifty different cities and they would all run alike, with only slight variations due to local causes not connected with the general downward tendency of the death rate during recent years.

A point has been raised as to the trustworthiness of American vital statistics, but I, for one, do not believe that the general accuracy of these statistics can be called in question. The registrars who compile the annual mortality reports of American cities are, I believe, and I speak from large personal knowledge, as trustworthy, as intelligent, and as deeply interested in their work as those of European cities. As a matter of fact, however, they would have no motive, nor sufficient control over all the elements involved, to materially alter the facts or otherwise impair their accuracy. There is need of specialized mortality investigations in this country along the lines adopted by the committee of the Actuarial Society of America. The census office at Washington, which now has permanent control over the national vital statistics, as far as

they are represented by the registration area, requires trained actuarial advice in the construction of tables and in the analysis of the facts. The two large volumes on vital statistics which have been given to the public are far from being the contribution to science which one has the right to expect from so important a government department. When we consider the vast interests affected by an accurate knowledge of the laws of mortality in this country, with special reference to the hygiene of occupations, and the prevalence of preventable diseases, it is a matter of regret that the data should not be of greater usefulness and determining value than they actually are. The government should employ a competent actuary in the census office for this purpose.

Another point has been referred to in the discussion, and that is the early health conditions in the United States in their relation to the high death rates prevailing fifty or seventy-five years ago. It requires a thorough knowledge of social and sanitary conditions in this country at different periods to accurately interpret the tendency of the death rate from decade to decade or from quarter-century to quarter-century. It requires a knowledge of the surface geology and topography, of the climate, of the natural drainage, of the distribution of the population by race, nativity, occupation, etc., to avoid far-reaching erroneous conclusions. If, for illustration, we were to compare the death rate of Denver with that of Fall River, we would have in one city a considerable proportion of impaired lives suffering from the tuberculosis in its incipient stage, while in the other we would have a large population of French-Canadian origin, among whom the death rate of infants is extremely high. Again, in the one case we would have a city located at an altitude of about 5,000 feet; in the other a community which is but a few feet above sea-level. Conclusions, therefore, based upon the crude death rate of two cities so entirely unlike are almost certain to be entirely erroneous.

MR. ARTHUR GUNCKEL (Germany):—

Beim Studium der Gore'schen Arbeit haben wir erfahren, dass es sich um die Statistik,—wie Herr Gore ausfuehrt,—von amerikanischen Staedten handelt, weil allgemeine Statistik nicht zu erlangen war. Zu meiner Verwunderung habe ich gesehen, dass die Zahlenergebnisse in den Gore'schen Tabellen in den letzten 25 Jahren denen sehr aehnlich sind, die wir in Deutschland,—ich spreche hier von allen Versicherungsgesellschaften,—erfahren haben,—naemlich dass Phthisis und typhoese Fieber diejenigen Krankheitsursachen waren, bei denen die Sterblichkeit zurueckgegangen ist, eben durch die Verbesserung der sanitaeren, insbesondere der Wasserverhaeltnisse, vielleicht auch durch bessere Buchung und besondere Klassifizierung von solchen Krankheiten, die frueher auf Phthisis zurueckgefuehrt worden waren.

In perusing Mr. Gore's paper we have learned that, as Mr. Gore explains, it treats of the statistics of American cities, because general statistics were not obtainable. To my surprise I saw that the numerical results in Mr. Gore's schedules for the last twenty-five years resemble very much those we have experienced in Germany—I include here all insurance companies—namely, that phthisis and typhoid fever were the diseases which showed a decrease in mortality, through the improvement of sanitary conditions, especially in regard to water, perhaps also through improved and specialized classification of such diseases as were formerly referred to phthisis. On the other hand, we have had the experience in Germany that heart diseases and diseases of the urinary and sexual organs, also cancer (Carcinome), show a considerable in-

Dagegen haben wir in Deutschland die Erfahrung gemacht, dass Herzkrankheiten und Erkrankungen der Harn— und Geschlechtsorgane, gleichwie Krebs (Carcinome), einen ganz erheblichen Zuwachs liefern; und es waere wohl zweckmaessig gewesen, Paralysen und die Krankheiten des Centralnervensystemes zusammen zu beobachten, denn eine ganze Reihe derartiger Krankheiten, welche sich infolge unserer ungeheuer gesteigerten Lebens- und Erwerbstaetigkeit in der Zunahme befinden, fuehren vielfach zu letalem Ausgang.

Um so mehr war ich daher erstaunt zu lesen, dass die Sterblichkeit sich gebessert haben solle, und ich ging dazu ueber, mich zu fragen, warum Herr Gore nicht das Facit seiner Rechnung gezogen hat, indem er die Quersumme seiner Tabellen fand und uns vorfuehrte, wie die verschiedenen Krankheiten in den 25 Beobachtungsjahren verliefen. Ich habe daher diese Quersumme selbst gezogen, und da stellt sich denn heraus, dass bei den noerdlichen Staedten sich fuer Typhus im Jahre 1876 94.84% und im Jahre 1900 100.07% ergeben, d. h. ueber fuenf Prozent mehr! Und daraus zu folgern, dass die Sterblichkeit geringer geworden ist,—das geht mir denn doch ueber die Hutschnur! Die Sterblichkeit hat nicht abgenommen, sondern sie ist von 94.84 in 25 Jahren auf 100.07 gestiegen! Ich kann nur annehmen, dass der rapide Rueckgang bei Phthisis und typhoesen Fiebern den Herrn Verfasser veranlasst hat nicht zu addieren, —aber das Ziehen der Quersumme ist doch die Hauptsache! Dasselbe muss ich bezueglich der suedlichen Staedte konstatieren, allerdings mit einer Einschraenkung, fuer "Liver Diseases"; auch hier zeigt sich eine Steigerung von 90.70 auf 96.19,—also eine Zunahme von fuenf bis sechs Prozent.

crease; and it would be desirable to discuss paralysis and the diseases of the central nervous system together, as a complete series of such diseases which, owing to our greatly augmented vital and industrial activity, are on the increase and lead frequently to a fatal ending.

I was therefore surprised to read that mortality is said to have decreased, and I proceeded to ask myself why Mr. Gore did not find the result of his calculation by taking the average of his schedules and demonstrating to us what course the various diseases had taken during the twenty-five years of observation. I therefore made up that calculation myself and arrived at the result that, as regards typhus in the northern cities, the percentage in 1876 amounted to 94.84 and in 1900 to 100.07, that is, over five per cent. more. To conclude from this that mortality had decreased really passes my understanding. Mortality has not decreased, but has risen in twenty-five years from 94.84 to 100.07 per cent.! I can only suppose that the rapid decline in cases of phthisis and typhoid fever caused the author to fail to arrive at this result, —but is not the striking of the average the main point? I must make the same statement with reference to the southern cities, with one limitation, regarding liver diseases; there also a rise from 90.70 to 96.19 is to be observed—hence an increase of from five to six per cent.

Hon. S. N. D. North (United States):—

I desire to reply briefly to the criticism of Mr. Hoffman in regard to the Vital Statistics of the Federal Census. No one who thoroughly comprehends all the difficulties which surround the collection of that class of statistics by a Census Office in the United States would feel

fully justified in making quite so sweeping a criticism. At the same time, the Census Office realizes the weakness and the deficiencies of this part of its work.

Before the permanent Census Office existed it was impossible to expect that any great amount of trustworthy data of this character could be collected.

Now that the Census Office is on a permanent basis, and we have a provision of law for the annual collection of vital statistics in the registration areas, there exists no good reason in my judgment why all the criticism implied in Mr. Hoffman's remarks should not be gradually and successfully eliminated. I desire to state that it is the purpose, the intention and the expectation of the Census Office that we will be able to eliminate its deficiencies and that we look to a great and influential body such as this to give us all the aid and assistance possible in that great work.

Mr. J. M. Craig (United States):—

I desire to say that I think we ought to arrive at a conclusion on this subject with very great caution. Personally, I have very great doubts as to the reliability of the mortality statistics of this country. If the diagram in Mr. Gore's paper is the result of the statistics available, I would fear to rely upon them for any conclusive results, from the simple fact that the years 1851 to 1875 show a general rate of mortality of 26.3 per thousand as against 21.8 per thousand for the succeeding twenty-five years. This is a decrease of four and a half per thousand or seventeen per cent; we should be most careful about accepting as reliable such a result.

Subject, *War Mortality.*

Papers.

War Risks, with Special Reference to the War in South Africa, 1899-1902, by Mr. Schooling of Great Britain.

The Risk-Rate of the late Chino-Japanese War, by Mr. Schida of Japan.

War Mortality in the United States, by Mr. Hann of the United States.

Mr. Ralph P. Hardy (Great Britain):—

I desire to interpolate a few observations, not with respect to the figures laid before us, but rather touching the general subject.

There are many reasons quite apart from the statistical and actuarial interest they involve, that a *résumé* of these figures respecting war mortality should be laid before this Congress so that all people may truly understand what is the real meaning of this crime which we call war. I take pride and satisfaction in the fact that these papers show something of the terrible horror of war and I hope that they may assist in overcoming the terrible and sorry condition which they show. I believe that any man is entitled to admiration who disregards all personal consideration in his sense of duty and of unflinching devotion to its performance, and I honor the unselfish sacrifice involved to defend the supposed necessities of the future at the expense of the claims of the present. But when I read the papers and see that the art of the orator and the painter is prostituted in inflaming the passions of an unconsid-

ering people, making a bad case appear worse and raising standards that are not civilized, I thank Mr. Schooling, Mr. Hann and Mr. Schida for this great object lesson which they have laid before us, that we, to say nothing of posterity, may understand the terrible price we pay for what we call war.

Viewing that terrible legacy of costs to pay, let us set our faces against the standard of a brute force; let us support those who think it wise to settle national disputes as between man and man. To that end we will find no more valuable material than these papers to show the curse, the horrible curse, which has passed down from generation to generation.

Mr. Kotaro Schida (Japan) :—

My paper does not contain a full investigation into the war risk of the late Chino-Japanese war. This is partly because statistics on the side of China were wholly unknown, and partly because some statistics were not at hand on the side of the military and naval departments of Japan. But I hope that in the future we will be enabled to make a full and complete investigation of these subjects and compare it with war experiences in other countries.

Mr. Robert G. Hann (United States) :—

I merely wish to add that I should have liked to carry the experience beyond the end of the war, to investigate the after effect upon the lives of those who passed through the war, but the information available was unsatisfactory, hence I had to stop at the point where I did.

Subject, *Mortality among Non-Caucasian Races.*
Papers.

Notes on Mortality in India and some other Tropical Countries, by Mr. Thomson of Great Britain.
On the Mortality of the Japanese, by Mr. Yano of Japan.
Mortality among Non-Caucasian Races, by Mr. A. Hunter of the United States.

Mr. James Chatham (Great Britain) :—

Mr. Thomson investigated the mortality in the West Indies, and I myself have made an investigation into the mortality experience of a West Indian office, the periods for which were similar to those stated by Mr. Thomson.

The first period of the investigation covered from the middle of the last century up to 1885, and the second period from 1885 up to 1900, and the results showed that a considerable improvement had taken place in the rate of mortality of those two periods. The results in the main accord very closely with the improvement shown in Mr. Thomson's paper.

We have been told that the improvement in longevity of assured lives might be due in some measure to the medical selection being now more effective. But that fact would not mean much in this case, because the selection produces an effect for a very short period indeed in tropical countries, much shorter than in countries in the temperate zone. I have no hesitation in saying that the indicated improvement in the mortality is due to the improved sanitary and other conditions in these islands.

A perfect drainage system has been instituted in many towns and its effects are manifest.

MR. ARTHUR HUNTER (United States):—

From my experience in studying tropical mortality my idea is that sanitation has a very great deal to do with the improvement in mortality in, for instance, the Island of Cuba. While the statistics may be a little misleading, the fact remains that yellow fever, which carried away thousands of people a few years ago, has been entirely stamped out of the island; for the last two years there has not been a single case of yellow fever in Cuba, and it should be remembered that along the entire border of Mexico yellow fever has been epidemic during the last two years, and it has been kept from Cuba only by the improvement there in sanitary regulations..

In my paper I have dwelt freely on business and sanitary conditions because these enter largely as determining factors into the mortality in tropical countries.

MR. M. M. DAWSON (United States):—

The results of the investigation made by Mr. Hunter coincide in a singular manner with the mortality experience in some of the Windward Islands where the Barbadoes Mutual Company is in operation. The investigation of the mortality of that Company shows that the death rate was remarkably low among persons of mixed blood in a country where negroes greatly predominate, and, according to Mr. Hunter, his investigation as to the mortality of negroes insured by regular companies in the United States on ordinary plans coincides with this result, and also indicates that the question of mortality of the negro race appears to depend more on the economic conditions under which its people live than upon any lack of vitality in the race itself.

While the mortality in Barbadoes, where the economic conditions of the blacks are peculiarly good, while the mortality among them is very low, it is very high in most of the West Indian Islands, and it is certainly very high in the southern part of the United States, where the economic and social conditions among the negroes are not good. The colored men who have been accepted by regular companies in the United States on ordinary plans are without exception men of considerable means who have risen above their class, and who live under better conditions.

This indicates very plainly that the high mortality found among the negro classes is due to the peculiarly bad conditions, sanitary and economic, among which they live.

MR. GEORGE KING (Great Britain):—

A year ago I had the opportunity of making up the mortality experience on a considerable number of lives in Jamaica. I am unable to say of what race, as we could not ascertain the color, but there was reason to know that a very considerable proportion of the lives were negroes. The period under review was between fifteen and twenty years.

Taking the whole number of lives over the whole period, the mortality was about ten per cent. in excess of the H^{M} mortality, a much

smaller excess than had previously been expected, and the same result obtained whether we took the lives in the aggregate or dealt with them by selected classes. Among the younger lives the mortality was light, among the older lives it was a trifle heavier, but the general result at age twenty years indicated as necessary an extra premium of two shillings six pence, which was shown to be sufficient to cover the risk until about the age of fifty years. The extra required throughout life was about thirty shillings; there were not sufficient persons over age fifty to furnish material to make satisfactory estimates above that point.

Subject, *Miners' Experience.*

Paper.

Invalidität und Mortalität bei den bayerischen Knappschaftskassen, by Mr. Eggenberger of Germany.

Mr. Max Gerecke (Germany) :—

Herr Dr. Eggenberger in Muenchen hat eine kleine Arbeit eingereicht ueber "Invaliditaet und Mortalitaet bei den Bayerischen Knappschaftskassen." Er war zu dieser Arbeit veranlasst worden von der Kgl. Bayerischen Regierung, um die statistischen Grundlagen zu schaffen ueber die bezueglichen Verhaeltnisse bei den Angehoerigen der Knappschaftsvereine und den in den staatlichen Betrieben beschaeftigten Arbeitern. Wegen der Verschiedenheit der in Betracht kommenden berg- und huettenmaennischen Betriebe musste eine Trennung der in Frage kommenden Arbeiter stattfinden, und zwar in drei Kategorieen: die in Kohlenbergwerken, die in Huettenwerken, und die im Salinenbetrieb beschaeftigten Arbeiter. Wegen der kleinen Anzahl der in Betracht kommenden Arbeiter aber musste die Beobachtung auf die letzten dreissig Jahre erstreckt werden.

Die Ergebnisse dieser Beobachtungen sind niedergelegt in zwei Tabellen. Die erste gibt die durchschnittlichen,—ohne Ruecksicht auf das Alter,—Sterbens- und Invaliditaetswahrscheinlichkeiten fuer die einzelnen Betriebsgruppen; und es ergeben sich aus dieser Tabelle viel groessere Abweichungen der durchschnittlichen Wahrscheinlichkeitswerte bei der Invaliditaet als bei der Sterblichkeit. Herr Dr. Eggenberger schiebt die Veranlassung zu diesen Abweichungen teils auf die Unsicherheit des In-

Dr. Eggenberger of Munich has sent in a short paper on "Invalidity and Mortality in the Bavarian Miners' Banks." He was induced to do so by the Bavarian government in order to create a statistical basis for the conditions prevailing both among the members of the miners' associations and the employees in the State mines. Owing to the differences existing among establishments to be considered, a division of the workmen in question into three categories had to be made: those employed in coal mines, in foundries and in salt works. Because of the small number of the workmen, the observations had to be extended over the last thirty years.

The results of these observations are put down in two schedules. The first gives the average mortality and invalidity probabilities, without regard to age, for single groups, and this schedule shows much greater deviations from the average probable values with regard to invalidity than with regard to mortality. Dr. Eggenberger attributes the cause of these deviations partly to the uncertainty in the idea of invalidity, but partly also to the differences in the amount of the invalidity-pension granted, as between the individual establishments, but he hopes that these deviations will diminish in course of time.

In the second schedule are given the

validitaetsbegriffs, teils aber auch auf die Verschiedenheit der Hoehe der bei den einzelnen Betrieben gewaehrten Invalidenrenten, aber er hofft, dass diese Abweichungen sich mit der Zeit geringer gestalten werden.

In der zweiten Tabelle werden fuer die gesammten Betriebe,—nach Altern geordnet und abgestuft,—die ausgerechneten Wahrscheinlichkeitswerte gegeben.

Meiner Ansicht nach sind diese Tabellen zwar sehr interessant; sie bestaetigen die bereits bekannte Tatsache, dass grosse Abweichungen in den Invaliditaetsverhaeltnissen bei den verschiedenen Betrieben bestehen. Ich wuerde aber Bedenken tragen, sie praktisch zu verwenden; teils deshalb, weil sie keine Ruecksicht nehmen auf die Dauer der Invaliditaet;—vor allem aber deshalb, weil sie durch ihre Ausdehnung auf eine Periode von dreissig Jahren keineswegs an Wert gewinnen. Gerade bei den einer ziemlich starken Unfallsgefahr ausgesetzten Berufen halte ich es fuer bedenklich, die Tabellen auch fuer die heutigen Verhaeltnisse zu benutzen wegen der,—besonders in Deutschland,—waehrend der Beobachtungsperiode eingetretenen ausserordentlich starken Veraenderung aller einschlaegigen Verhaeltnisse. Technische Verbesserungen, hygienische und Schutzmassregeln der Neuzeit, sowie die Unfallverhuetungsgesetze haben die Verhaeltnisse so von Grund aus veraendert, dass die vor 20 oder 30 Jahren gemachten Beobachtungen kaum noch fuer die Beurteilung der heutigen Verhaeltnisse zulaessig sind.

Ich moechte daher vorschlagen, bei der Verwendung der hier niedergelegten Zahlen fuer die Praxis recht vorsichtig zu sein.

probable values as calculated for all establishments, arranged and graduated according to ages.

In my opinion these schedules are very interesting; to be sure they confirm the fact already known, that great deviations in the conditions of invalidity obtain in the various establishments. I would, however, hesitate to put them to practical use; partly because they do not take into account the duration of invalidity, but above all because through their extension over a period of thirty years their value is by no means increased. Just so with the occupations exposed to considerable risk of accident, I deem it unsafe to make use of the schedules for present conditions, on account of the extremely great changes in all pertinent conditions that have taken place—especially in Germany—during the period of observation. Technical improvements, hygienic and protective regulations of modern times, as well as the laws for the prevention of accidents, have so completely altered conditions as to render observations, made twenty or thirty years ago, scarcely admissible for the estimation of present risks. I would therefore recommend great caution in the use for practical purposes of the figures here laid down.

Dr. James Raffmann (Hungary):—

Schon das Lebensversicherungsmaterial erfordert heute eine grosse Anzahl beobachteter Leben; und noch viel mehr die Invalidenversicherung. Infolge dessen ist das System zu empfehlen, welches bereits die Eisenbahnen angewendet haben, dass sie naemlich

The material for life-insurance statistics requires a large number of lives under observation, and much more is this true of invalidity-insurance. Consequently a system is to be recommended which the railroads have already adopted, namely, in not limiting

ihre Untersuchungen beispielsweise nicht auf Deutschland beschraenkt haben, sondern auch ganz Mitteleuropa hineingezogen haben. So hat doch auch diese kleine Arbeit fuer die kleinen Verhaeltnisse nur einen speziellen Wert, der fuer uns doch wahrhaftig kaum einen Vorteil hat; und es waere meiner Ansicht nach notwendig gewesen, ein groesseres Feld zu bearbeiten, wenn man diese Untersuchung unserem Kongress unterbreiten wollte.

their investigations, for instance, to Germany, but including the whole of central Europe. Thus this limited investigation is of especial value only for local conditions and can scarcely be of advantage to us; in my opinion it was necessary to cover a larger field, if this investigation was to be submitted to our congress.

Subject, *The New British Mortality Experience.*

Papers.

A Comparison of the O^{M} *Table of Mortality with the adjusted American Table,* by Mr. Hardy of Great Britain.

Brief Notes on the British Offices Mortality Experience, 1863-1893, by Mr. King of Great Britain.

Mr. George King (Great Britain) :—

In the first place, a full statement is given of the materials that were at the disposal of the Joint Committee who prepared this experience. The second portion of the paper contains the statistical deductions from the tables of materials, and I should like to call attention to the table headed "Model Office," that is No. 9. This shows the number of policies issued at each age for each age of duration. Of course, this is simply to give a close approximation of the position of an ordinary company. I call attention to this because, so far as I know, similar investigations have not been made outside of the United Kingdom, and while it is very likely that the ratios from table No. 9 would not be applicable to Continental or American companies, it might be useful for some actuaries in America and on the Continent of Europe to make similar investigations of a model office in the same manner.

Table No. 10 gives the expectation of durations of policies and I put that in here, in rather a prominent position, because of assessment insurance. I understand that there is still a great deal of that business transacted in America, and I do not suppose there will be any voice raised in contradiction to the expression of the disapproval that is felt in England of the principles of assessment insurance. This table No. 10 shows that policies exist far longer on the books of the companies than the assessment companies assert, and it shows how dangerous is the assessment principle regarding this point.

Table No. 12 gives a comparison of the rates of mortality by various tables, and I have included the American Experience, so that a comparison may be made with the rates presented by Mr. Hardy in his paper, which I was not aware of when I wrote this paper, and table No. 15, the monetary values, premiums and policy values deduced from the tables, compared with similar values from other tables, and lastly we have the financial effects of the new tables compared with similar effects of the various other tables.

There is one point that is worthy of mention, namely that the Amer-

ican table gives smaller reserves. That is rather curious. The average of the other tables gives larger policy values than the American table. The old Select table gives the largest reserve of all, except for very recent business. This I think throws some light upon the question of allowance for new business. Actuaries disagree, and necessarily so, as to the proper allowances for new business. Many say that the lighter mortality due to medical selection enables high allowances to be made. But it is to be seen that if we value by the Select table we get all the effect of the light mortality at the beginning, while the reserve brought out is larger by the Select table than by any other. This has an important bearing upon the question of medical selection as a factor in the allowance for new business and in valuations.

I should like to utter a word of warning in regard to the endowment assurance experience. For the first time the endowment assurance experience is separate from the rest, but I should like to say that, in the opinion of many British actuaries, this experience is not a safe one on which to base financial estimates. The policies are of far too recent issue and the very light mortality shown is not likely to be a permanent feature of the endowment assurance business, so that it would not be safe to base premium rates or reserves upon this experience.

Mr. M. M. Dawson (United States) :—

Mr. King expresses the opinion that, as the custom of taking out endowment insurance has become more common in Great Britain, the experience will not be so favorable in the future because there will not be so strong a self-selection. We have had a very wide experience with endowments in the United States, and also with forms of insurance which are sold as investments, namely, tontine or deferred dividend policies, and the experience has been precisely contrary to what is mentioned here. Self-selection has apparently been maintained, and all the experience on endowment policies in the United States has continued to be very favorable.

In one company which has made a specialty of endowments and which has not sold other forms of investment insurance, The Provident Life and Trust of Philadelphia, the experience has been so favorable as to excite great comment, and in other companies wherever they have separated the experience on endowments similar results have been found. It appears, therefore, that this *a priori* assumption or argument is not justified by the facts, in this country where endowment insurance has for a long time been issued in large amounts.

This also is the case in Australia, namely, that the experience of the leading companies there on endowment business has always been extremely favorable, and that this has continued to be the case although a very large proportion of the population have purchased endowment insurance.

The last paragraph on page 699 of Mr. King's paper seems to me to call for some comment also. This is to the effect that it becomes at once apparent that the opinion already held is well founded, namely, that an aggregate table is not suitable for the calculation of premium rates, as it understates the premiums at the younger ages and overstates them at the older. The assumption on which that opinion is founded is that the proper basis for premium rates is the select table. This view is very common in Great Britain, whereas in the United States we are inclined to a decidedly different view.

Our view is that a Select or aggregate table is not suitable for computation of premiums, taking into account the fact that it is desired that the bonuses or dividends arising from improvement in mortality shall be distributed over the whole membership, and not among those only from whom the favorable mortality is derived. The view in this country is that the net premium should be based on a safe table, by which we mean a table based on the rate of mortality existent after the effects of medical selection have worn off. The assumption I think is general in the United States that the premium should be based upon what is now called in Great Britain an ultimate table. This bears also on the remarks on page 700 of Mr. King's paper. It will be noticed, that, although on the whole the H^M reserves are smaller than the O^M, yet the H^M Select reserves are the largest of all of those included in Table No. 15. It is a very common view among actuaries that a valuation by a Select table approximates most nearly to the truth.

It was in the first article relative to Select tables that Dr. Sprague held that, in the valuation, a safe table should be used for the net premium P^x, whereas the annuities and the reversion should both be taken by the Select table. A valuation on the basis of the principle enunciated by him would not, of course, be what the British understand by Select table valuation, but would conform more closely to what Americans would mean if they should use the same term.

A remark on page 701 seems to be of great value as illustrating the fact which many actuaries lose sight of, namely, that a mortality table exhibiting high mortality rates during the younger ages does not necessarily bring out high reserves.

MR. DAVID CARMENT (Australia):—

Mr. Dawson has referred to the fact of the low mortality on endowment assurances as did Mr. King also. The questions are, what is the cause of this and will it continue? While in Australia the endowment assurances are increasing in number in proportion to the total business, and the mortality on them is extremely low, of course it would be a doubtful prophecy to say that it will continue forever. I think it very likely that the mortality on those policies will continue somewhat lighter than that on the whole life, although the cause seems to me to be entirely undiscernible.

I note also the Select table requires higher reserves, but the net result appears to my mind to be that the O^M table does not require such a largely increased reserve as to render it unsafe for companies to continue to value as they have been doing.

MR. HENRY W. MANLY (Great Britain):—

Mr. King gives a very close examination and comparison of the new experience, which the Institute and Faculty jointly have produced in the O^M Tables, with the old Institute experience known as the H^M, and it is remarkable to notice how very close is the agreement of the results by the two tables, showing how the more recent mortality among assured lives agrees with that prevailing forty years ago. Mr. King shows that, taking the mortality for the whole extent of the table, there is after all very little difference between the old and new tables. But, as was shown so clearly in the discussion on longevity, there has been a very great improvement in the younger lives, from the youngest age up to age fifty,

and this greatly affects the mortality among those who take out endowment policies. Endowment assurances mature before vitality ceases, as it were. The mortality is light during the usual duration of endowment assurances, up to age fifty-five or sixty. It then comes into line with tables which have been deduced from previous experiences. This fact explains to a large extent the light mortality which is found in all experiences deduced from the endowment assurances alone.

It certainly was new to me to hear Mr. Carment say that the new experience would require larger reserves. Endowments with no mortality would simply be banking accounts, and any mortality which makes payable the assured sum, before the maturity of the endowment, would require a reserve larger than the bank balance, and therefore the greater the mortality the larger the reserve.

Mr. Dawson referred to the calculation of the premiums and suggested endowment assurances should be calculated upon the select rates rather than upon the aggregate or ultimate rates. In England we are disposed to find out first, what is the exact rate of premium required to meet the probable rate of mortality, and after that to make a proper loading to meet all the various contingencies. We do not use the same loading on term policies or endowment policies as on whole life policies. We consider each kind of risk on its own merits. Each kind of risk has its own contingencies to bear, and the final rate of premium which we might deduce from taking the net premium upon the select table would not necessarily be less than one calculated from an ultimate table. Of course, the loading for contingencies might be larger in the one case than in the other. We are always desirous to examine our profits from mortality, interest and other sources, and the consequence is that we prefer to start with the ultra exact premium.

Mr. T. B. Macaulay (Canada) :—

There are two classes of mortality tables, the first including tables based upon statistics which are entirely unaffected by selection, and the second consisting of those based upon statistics in which selection, especially adverse selection, plays an important part. All aggregate tables belong, of course, to this latter group.

The fact to which I wish to call attention is that selection in any aggregate table alters the mortality curve into an altogether different curve from that of the normal population or of any particular group of lives that is unaffected by selection. The rate of mortality at the younger ages is abnormally lowered, because the younger ages contain only lives recently selected, and it is only at the higher ages that the normal rate may be said to be reached. In other words, the mortality curve of an aggregate table based on assured lives is much accentuated, very much steeper, so to speak. Therefore, when we compare a table like the H^M with a table based upon the statistics of the general population, we get heavier reserves, simply because the mortality curve is steeper.

In the O^M table there is a feature which, in this connection, comes very prominently to the front. Excluding all the earlier years of duration of the policies that were in force in 1863, and including all the later years of the same policies, the effect is to add a very large number of lives that have been long selected. Policies taken out before 1863 at the higher ages had nearly all run off the books before 1863, with the result that those policies that were added to the experience as being in force in 1863 were, to a very large extent, on old lives, long insured. The

result is that in the O^M table the percentage of lives long insured is decidedly greater than in the H^M table.

The effect is to accentuate the steepness of the mortality curve. These long selected lives naturally show a heavier mortality than those recently selected, and as the percentage of the old lives, long insured, is greater, it follows, of course, that the percentage of newly selected lives is less. The result is an accentuation of the mortality curve and an increase of reserves. In the H^M Table, or any other aggregate table of that kind, we have an experience of the kind which any company will get if it investigates its total experience. But in the O^M table we have an experience of a radically different character.

MR. ARTHUR R. BARRAND (Great Britain) :—

I have to suggest one other reason why this endowment assurance experience is hardly a safe guide for the calculation of premiums or reserves. It is mainly a financial one. In the past, endowment assurances have not been pressed by most British offices; consequently, it was only those of comparatively high intelligence and self-selected who would get that kind of assurance. Such is not now the case, and for this reason, many English companies, doing a very large endowment assurance business, base the commission of the agent upon the premium and give the same rate of commission as upon whole life assurances. The result is that there is a very great inducement to the agent to press endowment assurance rather than whole life assurance. We ought to regard the sale of a class of assurance where there is an increased financial gain to the agent as rather an evidence of the pertinacity of the agent than of a selection of the assured, and under those circumstances a self-selection of lives can hardly be said to exist. It is well to consider the degree of probability that the low mortality shown on endowment assurances in the past will be continued in the future.

MR. WILLIAM HUGHES (Great Britain) :—

There is one other point with reference to the quality of lives that take endowment assurances which I think has not been touched upon, and that is, that it is not uncommon when a life is not of a first class character, to give the option of taking endowment assurance at ordinary rates rather than rating up, or absolutely rejecting the risk on the whole life-plan. This, of course, would have a tendency, as far as it goes, to lower the quality of the lives taken under endowment assurances.

MR. EMORY MCCLINTOCK (United States) :—

Mr. Barrand mentioned, as regards the British Actuaries, that they are not inclined to base premiums for endowment business on the endowment experience. I would add that I have never even heard the idea suggested in this country or Canada. Mr. Barrand suggests that the effect of commissions now paid to agents on endowment business may be to equalize the mortality with that on life business. As to that, there is in existence a large body of experience. The endowment business has been done in this country for many years on a large scale, and in many companies has been done on the basis of giving the same percentage for

commissions as on ordipary life business. In all the companies, so far as known, the mortality on endowment business is distinctly and persistently much better throughout than it is on corresponding life business.

Mr. Hughes referred to the practice of giving to people who are not up to the best standard, not what they ask for, but endowment policies instead. This practice undoubtedly has an effect, and the extent of the effect is shown in the mortality publication that has just been completed by our Society; but, in spite of that, the endowment business, as a whole, including that bad part of it, is much better than the life. This is not theory, it is practice and fact. When we consider that the very same result occurs in connection with the limited payment life business, as with the endowment business, we are forced to the conclusion, not that we cannot find out what the reason is, but that the reason is because the people are paying larger premiums.

Mr. Frederick Schooling (Great Britain):—

I desire to say that, after an examination of several hundreds of thousands of endowment assurance policies that have existed in England during the last twenty-five years, the experience agrees exactly with the American experience and that the favorable mortality does exist throughout the duration of the policy.

I regard the statements of Mr. King and Mr. Barrand as based on surmise, not on actual experience, and I wish to emphasize the fact that, as far as our English experience goes, it does agree with the American and Australian.

Mr. Morris Fox (New Zealand):—

From the remark made by Mr. McClintock I gather that he is under the impression that in Australia the endowment experience is used for the purpose of calculating premiums and reserves on such policies. That is not so.

As to the remark of Mr. Barrand, that the agents are paid a higher commission on endowment assurances, when paid by a percentage on premiums, in Australia and New Zealand it is the general practice to pay the same commission on endowment policies as on whole life, a rate per cent. on the hundred of insurance, and therefore the agent has a greater incentive to sell whole life policies to the public because the rate of premiums is less and the agent gets the same commission.

In the company with which I am connected, more than half of the business is endowment assurance, and from the mortality experience on classes I can inform you that throughout the duration of practically all policies the mortality on the endowment assurances is much lighter.

Mr. Robert G. Hann (United States):—

In confirmation of what has been said in regard to the favorable mortality on endowment assurances, I can state that, in a well known company having many millions of endowment assurances and also of limited payment policies, the mortality on the latter is more favorable than on life, and on the endowment it is far more favorable than on either of the other two.

Mr. George King (Great Britain) :—

Much of the discussion has turned upon endowment assurance, and the mortality connected with it. I am glad the discussion has turned in that direction. But, at the same time, I must point out that a large part of it has been due to a misunderstanding of my words. I did not say that the endowment assurance mortality would not be better than the whole life mortality. I said that I do not think it is likely in the future to be so good as the experience shown in the British Offices table. I feel quite certain that it will be better than the whole life mortality, but I wish to put in a word of warning that it will not be wise to base rates for endowment policies on the experience shown by that table. The same limitation holds in regard to limited payment life policies, and the experience in the United Kingdom is that the rate of mortality depends very much upon the rate of premium paid.

The lower the premium, the higher is likely to be the rate of mortality. This holds universally.

I did not quite follow what Mr. Macaulay said in regard to the accentuated curve in the O^M table. I am not clear whether he referred to a comparison with tables formed from the entire population, or with such a table as the H^M. If he spoke of a comparison with the H^M table, then I am not in accord with him. The O^M table is more like the truncated O^M5 than the H^M table is like the H^M5. But that very fact would tend to diminish the gradient rather than to increase it, as compared with the H^M table.

Mr. Ralph P. Hardy (Great Britain) :—

The main object in the preparation of my paper was to assist the American actuaries in ascertaining precisely the main and important points of difference existing between the American Table, which is their own official standard of measurement, and the tables of the recent British Experience.

I availed myself of the opportunity to investigate a question of some importance as to the real effect, upon the surplus of insurance companies, of a lower rate of mortality than that upon which premiums and reserves are based.

I have always found that there is a difference, but until I investigated it in this particular way, I did not realize how serious a question it is, and how much a more serious question it is going to be in the future.

Mr. J. G. Van Cise (United States) :—

I desire to express the thanks of the American actuaries to Mr. Hardy and Mr. King for the papers and the information they have given in regard to the O^M table as compared with the American table. At the same time I do not suppose we shall use the new English table here, for the reason suggested by Mr. King, namely, that in America the valuation of liabilities is determined for the most part by the laws of the different States. There are forty-five different States which make their own laws and fix their own standards of valuation, and therefore in practice we must conform our valuations to those lines, so long, of course, as they are safe. While formerly the State requirement was a valuation at four per cent. interest, and generally on the Seventeen Offices Table,

now, with a lower rate of interest, three and a half per cent., the States are generally adopting the American Table as the mortality standard. The requirements will probably be based in the future at three and a half or three per cent. interest on the American Table.

MR. L. M. CATHLES:—

Mr. Schooling expressed my feelings when he referred just now to the rather startling results shown in the table at the beginning of this paper. Mr. Hardy's method of examining the profit or loss brought about by a variation in the mortality experienced from that expected and his results both give considerable ground for reflection. The rapid diminution shown in successive quinquenniums is all the more dangerous because the ever increasing flow of new endowment business with its large profits in the first few years tends to hide the diminution in later years. Of course the analysis applies only to the particular tables and conditions assumed, and the idea must be expanded and adapted by each country to its own tables and conditions. It seems probable, however, that American offices will experience something like the O^M mortality, and to them the paper must be specially suggestive.

MR. T. B. MACAULAY (Canada):—

I desire to make one point clearer. If we suppose that by the H^M experience, at age twenty-five, the proportion of policies on lives exposed for less than five years is ten per cent. of the total exposures, then by the O^M experience the proportion would be about the same. There is no reason why it should be appreciably different.

If, however, we take age sixty-five, and assume that by the H^M experience the number of persons exposed for more than five years was seventy-five per cent., and if we find that by the O^M experience the proportion of persons similarly exposed, instead of being seventy-five, is eighty-five per cent., then it follows that the number of persons who survive the higher mortality due to being longer assured, will form a greater percentage at age sixty-five by the O^M table than by the H^M table, and that consequently the O^M table will approximate to the normal mortality of the general population more readily than the H^M table. Therefore, the mortality curve of the O^M table will necessarily be more steep than that of the H^M table, and, of course, there is supposed to be no divergence from the normal mortality curve in the case of tables unaffected by selection. The point I wish to make is that the mortality curve is accentuated by the fact that at the older ages the proportion of lives assured is greater under the O^M than under the H^M table.

MR. GEORGE KING (Great Britain):—

It is quite true that the gradient of the O^M curve is somewhat steeper than the gradient of the H^M, but I venture to think that the explanation given by Mr. Macaulay is not correct, or at least that it is not complete. He explains that, on account of the larger number of survivors under old policies, the experience of which during the early periods was not brought into the account, heavier mortality is shown for the older ages. That is true, but he has omitted to notice that there is a countervailing action having the opposite effect. All through the middle period of life the rate

of mortality in the aggregate table is very considerably affected by new entrants, and on account of the inclusion of the old policies in the O^M experience there are not proportionately so many new entrants during the middle period as in the H^M experience. The new entrants tend to reduce the rate of mortality, and consequently, there being fewer of them, the rate of mortality is higher, tending to reduce the gradient of the curve. While it is quite true that the large number of survivors at the older ages tends to increase the gradient of the curve, yet the failure to receive so large a proportionate number of new entrants in the middle period of life tends to reduce it. One cannot say what is the precise effect of these two causes.

I think that a trifling part of the steeper grade of the O^M curve is due to the fact that there has been general improvement in the rate of mortality, but that such improvement is more marked in the younger ages than in the older, and consequently the gradient of the curve is increased, not by a higher mortality at the older ages but by a reduction in the mortality at the younger.

DR. JAMES RAFFMAN (Hungary) :—

Ich will nur einige Worte zu der letztberuehrten Erfahrung hinzufuegen, und zwar betreffs der Vergleichung der Sterblichkeit, sei es auf Grund der Sterblichkeitstafeln verschiedener Nationen, sei es auf Grund einer Sterblichkeitstafel, welche auf der gewoehnlichen Volkszaehlung, oder einer solchen, welche auf den Beobachtungen der Versicherungsgesellschaften beruht,— sei es endlich auf Grund von Sterblichkeitstafeln, welche ein bestimmtes Material oder ein bestimmtes Land beruecksichtigen, oder solchen, welche sich hierauf nicht beschraenken, sondern entweder verschiedenes Material oder verschiedene Laender oder verschiedene Zeiten behandeln. Je weiter wir vorschreiten, desto klarer wird es, dass diejenigen Nationen, welche in der Kultur am weitesten vorgeschritten sind, uns die genauesten Auskuenfte in jeder Richtung erteilen.

I only wish to add a few words on the last-mentioned subject, with regard to comparisons of mortality; be they on the basis of the mortality-tables of different nations; be they on the basis of a mortality-table founded upon a regular census, or of one that is the result of the observations of the insurance companies; be they, finally, on the basis of mortality-tables based on specific materials or a specific country, or of such as are not confined to this, but consider either different materials, or different countries or different periods. The farther we progress the more evident it becomes that those nations who have advanced farthest in civilization can give us the most accurate information in every respect.

Subject, *Annuitants' Mortality.*

Paper.

Die Sterblichkeit der schweizerischen Rentner, by Mr. Kihm of Switzerland.

MR. FRITZ ROSSELET (Switzerland) :—

La Direction de la Société Suisse d'Assurances Générales sur la Vie

The Board of Directors of the Swiss Society of Life Insurance Companies

Humaine, m'a prié de référer sur le travail dont elle a pris l'initiative, et qui a été exécuté par son Actuaire, M. Kihm.

Le but des recherches statistiques dont il s'agit a été d'étudier la mortalité parmi les rentiers Suisses.

L'initiative de ce travail, comme je viens de le dire, a été prise par la Société Suisse d'Assurances Générales sur la Vie Humaine, après la publication des récentes études des Actuaires Anglais sur la mortalité parmi les rentiers Anglais. Il s'agissait de voir si, et jusqu'à quel point les observations faites en Angleterre se trouvent confirmées par les observations par les rentiers Suisses, spécialement en ce qui concerne l'influence du sexe et l'autre sélection.

has requested me to report on the work in which it has taken the initiative, and which was performed by its actuary, Mr. Kihm.

The purpose of the statistical researches in question was to study the mortality among the Swiss annuitants. This work was taken up after the recent studies of the English actuaries on the mortality among the English annuitants had been published. The question was to ascertain if and to what degree the observations made in England are confirmed by those among the Swiss annuitants, especially in regard to the influence of sex and other selection.

Mr. Albrecht Gerkrath (Germany) :—

Ich moechte den Schweizer Herren fuer die eingehende und wertvolle Arbeit, welche sie geliefert haben, den waermsten Dank aussprechen. Es ist zweifellos, dass es gerade fuer die Erforschung der Sterblichkeit der Rentner noch ausserordentlich viel zu tun gibt, und dass es gerade die Aufgabe der einzelnen Gesellschaften ist, uns aus ihren speziellen Erfahrungen Mitteilungen zu machen bezueglich dieser Sterblichkeit der Rentner. Denn alles was aus allgemeinen Erfahrungen und Statistiken hervorgeht, ist,—so gut es auch geliefert wird,—fuer die Praxis nur recht wenig zu verwerten. Die gewaltige Wirkung der Selbst-Selektion bei dem Verlauf der Sterblichkeit von Rentnern kann nur durch Mitteilungen aus der Mitte der Gesellschaften heraus ermessen werden.

Ich wuerde deshalb den Herren aus der Schweiz,—und Herrn Kihm insbesondere,—ganz besonders dankbar sein, wenn sie uns noch etwas naehere Angaben machen wollten, in welchem Umfang in ihren niedergelegten Erfahrungen solche Renten enthalten sind, welche obligatorisch genommen sind, bei denen demnach von vorn berein eine Selbstauswahl ausgeschlossen war.

Sodann wuerde ich es fuer wuen-

I wish to express my warmest thanks to the Swiss gentlemen for their thorough and valuable investigation. There is no doubt that in regard to inquiries into the mortality among annuitants there is yet a great deal to be done, and that it devolves upon the individual societies to give us the benefit of their special experience regarding such mortality. For everything that is gathered from general experience and statistics, good as it may be, can, after all, be turned to practical account only in a limited degree. The immense effect of self-selection upon the rate of mortality among annuitants can be estimated only by information from amongst the societies. I should therefore feel under great obligation to the gentlemen from Switzerland, and especially to Mr. Kihm, for stating to us more specifically to what extent their recorded experiences contain such annuities as were taken compulsorily and which, therefore, excluded a self-selection at the outset. I should also deem it desirable to escertain if, and to what extent, so-called deferred annuities were taken into account. For in this case the influence of self-selection does not make itself felt in the same degree, because one's individ-

schenswert halten zu erfahren, ob und in welchem Masse auch sogenannte aufgeschobene Renten beruecksichtigt worden sind. Denn bei diesen macht sich der Einfluss der sogenannten Selbst-Selektion nicht mehr in demselben Maasse geltend, weil der individuelle Gesundheitszustand der Menschen doch nicht so weit vorhergesehen werden kann, dass mit gleicher Sicherheit auf eine nach zehn Jahren beginnende Rente gehofft werden kann, wie auf die sogleich beginnende.

Immerhin kann ich nicht schliessen, ohne nochmals hervorzuheben, dass wir die vorgelegte Arbeit als eine recht wertvolle und gute betrachten, und dass wir gerade deshalb auf einige kleine Ergaenzungen in den beregten Punkten hoffen.

ual state of health cannot be foreseen to that extent that an annuity to begin ten years hence may be expected to be enjoyed with the same certainty as one that is to begin at once.

I cannot conclude without again emphasizing the fact that we consider the paper submitted an extremely valuable and efficient investigation, and that for this reason we hope for supplementary information regarding the points in question.

MR. HECTOR DUPLAIX (France) :—

Dans le discours qu'il a prononcé, lors de la séance d'ouverture, M. Pierson, l'Honorable Président du Quatrième Congrès International d'Actuaires, a bien voulu faire une aimable alusion aux Tables de Mortalité établies récemment par les Actuaires des trois Compagnies Françaises, du Comité, M. Duplaix (Assurances Générales), M. Quiquet (Nationale), M. Oltramare (Union).

D'autre part nous avons appris, avec plaisir, qu'un actuaire Suisse, M. Kihm, avait également produit un très intéressant travail, relatif à la mortalité des rentiers des Compagnies d'Assurances de son Pays. La question de la mortalité des rentiers viagers, se trouvant ainsi posée devant le Congrès, nous pensons intéresser nos Collègues étrangers en leur donnant quelques indications concernant les Tables du Comité, dites Tables 1900.

L'examen des compte-rendus des Compagnies Françaises d'Assurances sur la Vie, durant ces dernières années, permet de constater un accroissement considérable des Assurances de rentes viagères et des assurances en cas de vie. Aussi devient-il de plus en plus important, pour ces Compagnies, de se préoccuper de savoir comment la mor-

In his speech delivered at the opening session, Mr. Pierson, the President of the Fourth International Congress of Actuaries, has been pleased to make a kind allusion to the mortality-tables made up recently by the actuaries of three French Companies, acting as a Committee, namely, M. Duplaix (Assurances Générales), M. Quiguet (Nationale), M. Oltramare (Union).

We have also learned with pleasure that a Swiss actuary, M. Kihm, has likewise produced a most interesting paper relating to the mortality among the annuitants of the insurance companies in his country. The question of mortality among annuitants being thus laid before the Congress, we think it will interest our foreign colleagues to receive some information concerning the tables of the Committee, called Tables 1900.

An examination of the returns of the French Life Insurance Companies during recent years shows a considerable increase of annuities and of insurances in case of survival. It, therefore, becomes more and more important for these companies to know how mortality varies, according to sex and age at entrance.

It was for the purpose of obtaining

talité varie, suivant le sexe et l'âge, à l'entrée.

C'est pour répondre à cette préoccupation que, dans sa Séance du 24 Mars 1899, le Comité des trois Compagnies Françaises d'Assurances sur la Vie décidait d'établir des Tables de Mortalité par âges, à l'entrée, au moyen des observations fournies par leur clientèle de rentiers viagers et d'Assurances en cas de Vie.

Les observations ont été fournies par des polices émises du 1er Juillet, 1889, au 30 Juin, 1898, pour les assurances suivantes:

Rentes Viagères Immédiates.

Rentes Temporaires.

Rentes Viagères différées.

Assurances de capitaux différés avec et sans remboursement.

La préface des Tables contenant un exposé détaillé de la méthode suivie par les actuaires du Comité pour l'établissement des cartes et pour le dépouillement des observations, nous pensons qu'il est inutile d'entrer dans le détail des opérations techniques, effectuées lors de la construction de la Table. Toutefois, un point extrêmement important mérite, croyons-nous, de retenir l'attention. Il s'agit de la détermination des âges à l'entrée des rentiers ayant souscrit plusieurs contrats de rentes viagères. L'âge, à l'entrée, a été déterminé par la date de la police la plus ancienne, de sorte que chaque rentier a été considéré comme une tête unique. La justification de ce procédé peut être tirée de l'expérience courante des Compagnies Françaises d'Assurances sur la Vie: expérience qui semble prouver que la sélection s'exerce principalement lors de la souscription du premier contrat. Souvent, les versements ultérieurs ne sont effectués que pour arrondir le montant de la rente, parfois aussi le rentier pouvant se priver, momentanément, de ses arrérages, les laisse dans les Caisses de la Compagnie pour servir à la constitution de nouveaux contrats.

Et il n'est pas douteux que le rentier ne consente à effectuer ces divers versements, beaucoup plus aisément, qu'une personne qui souscrit une police pour la première fois. Au surplus, l'agent de

this information that the Committee of the three French Life Insurance Companies, at its meeting of March 24, 1899, decided to draw up mortality-tables according to ages at entrance, by means of observations of the lives of their annuitants and of those insured in case of survival.

The observations were furnished by policies issued from July 1, 1889, to June 30, 1898, for the following kinds of insurance:

Immediate Annuities.

Temporary Annuities.

Deferred Annuities.

Pure Endowment Assurances, with and without reimbursement in case of prior death.

As the introduction to the tables contains a detailed exposition of the methods followed by the Committee in filling up the cards and in classifying the observations, we consider it unnecessary to enter into the details of the technical operations carried on at the time of the construction of the table. Still, one extremely important point deserves, we believe, to be noted. This point is the determination of the ages at entrance of annuitants who have purchased several annuities. The age at entrance was determined by the date of the earliest policy so that each annuitant was considered as a single life. This procedure may be justified by the average experience of the French Life Insurance Companies, an experience which seems to prove that the selection takes place principally at the time of signing the first contract. Often the subsequent payments are made only so as to enlarge the amount of the annuity, sometimes also the annuitant, being able temporarily to do without his arrears, leaves them in the hands of the company to serve for the taking out of new contracts. There is no doubt as to an annuitant consenting to make these succeeding investments much more readily than a person who invests for the first time. Besides the agent of the company is, by reason of the fact of the arrears, in almost continuous contact with the annuitant and he is particularly in a position to solicit a new investment

la Compagnie se trouve, en raison du service des arrérages, en contact presque permanent avec le rentier, et il est particulièrement bien placé pour solliciter une affaire nouvelle, qui sera d'autant plus facilement acceptée par le rentier, qu'il est déjà client de la Compagnie.

Aussi, lors de l'établissement des Tables, il n'était pas rare de trouver des rentiers ayant effectué 15 ou 20 versements, et on pourrait même citer le cas de personnes qui, ayant laissé pendant plusieurs années leurs arrérages dans les Caisses de la Compagnie, étaient devenues titulaires de 60 contrats, et plus.

En ce qui concerne les résultats obtenus dans les Tables de mortalité de 1900, nous nous bornerons aux remarques suivantes.

La mortalité constatée pour le sexe féminin a été inférieure à la mortalité indiquée pour le sexe masculin, pour tous les âges qui figurent dans les tables. Le même résultat était d'ailleurs également constaté, il y a quelques instants, dans la table relative aux rentiers Suisses.

La mortalité constatée pour les sexes réunis est sensiblement la même que la mortalité indiquée par la Table R. F. bien que les Tables 1900 contiennent un nombre très notable d'expériences nouvelles.

Les Tables 1900 permettent d'apprécier, d'ores et déjà l'influence de la sélection, à l'entrée, pour les rentiers viagers. Cette influence est surtout mise en lumière par le groupement des durées en périodes quinquennales, groupement qui constitue, déjà, un premier ajustement.

Enfin, ces Tables paraissent avoir apporté une contribution à l'étude de la mortalité aux jeunes âges (de 0 à 25 ans inclus). Alors, en effet que la Table R. F. n'avait fourni que 1710.5 années de vie, la Table 1900 comprend les chiffres suivants:

Les hommes de 0 à 25 ans ont fourni	30.879
Les femmes de 0 à 25 ans ont fourni	36.272,5
Total	67.151,5

which will be accepted by the annuitant the more readily, since he is already a client of the company.

It was found when the tables were completed that not infrequently annuitants had made 15 or 20 investments and there may even be cited the case of persons who, having left their arrears in the hands of the company for several years, had become beneficiaries under 60 contracts and more.

As regards the results obtained in the Mortality-Tables of 1900, we will confine ourselves to the following remarks. The mortality of the female sex was inferior to that indicated for the male sex, regarding all ages included in the tables. The same result was stated a little while ago, as pertaining to the table of the Swiss annuitants.

The mortality of the sexes combined is obviously the same as that indicated by table R. F., although the Tables 1900 contain a notable number of new experiences.

The Tables 1900 afford an estimate, approximate, of the influence of selection at entrance, as regards annuitants. That influence is particularly demonstrated by grouping the terms of duration in quinquennial periods, a grouping which constitutes a first adjustment.

In short, these tables seem to have supplied a contribution to the study of mortality at young ages (from 0 to 25 years, inclusive). While Table R. F. was based on only 1710.5 years of life, Table 1900 comprises the following years of life:

The males from 0 to 25 years furnished	30.879
The females from 0 to 25 years furnished	36.272,5
Total	67.151,5

In order to give an appreciation of the interest attaching to the work performed by the Committee, we state below the most important results furnished by the observations of the three companies. These results are extracted

Afin de permettre d'apprécier l'intérêt du travail effectué par les actuaires, nous donnons ci-dessous les résultats.

from the introduction to the Tables (pages xxvii).

COMPARAISON AVEC LA TABLE R F

Pour faciliter d'intéressantes études comparatives les tables annexes A, B, C, présentent en regard des éléments de la nouvelle table les éléments analogues tirés de la table R F, en ce qui concerne :

Le nombre des têtes observées ;

Le nombre des décès observés ;

Et les quotients des nombres de décès annuels par le nombre de têtes en observation.

Des indications générales sur le nombre de têtes et de décès observés et aussi sur le nombre des années de vie soumises à l'expérience sont en outre données ci-dessous.

Nombre de têtes observées.—Le nombre des têtes observées dans la nouvelle table est..... 118.840

Il se décompose en :

Nombre de têtes observées :	Hommes.....	46.933
d°	: Femmes.....	71.907
	TOTAL.....	118.840

Le nombre total des têtes observées dans la table R F s'élevait à 67.247 (sexes réunis) (1).

Nombre des décès observés.—Dans la nouvelle table le nombre des décès observés est de 55.751 se décomposant en :

Décès observés :	Hommes.....	24.355
d°	: Femmes.....	31.396
	TOTAL.....	55.751

Dans la table R F, le nombre des décès observés était de 36.916, se décomposant en :

Décès observés :	Hommes.....	16.410
d°	: Femmes.....	20.506
	TOTAL.....	36.916

En particulier, pour les ages jeunes (0 à 25 ans inclus), le nombre des décès observés dans la nouvelle table est de 264 se decomposant en :

Décès observés (de 0 à 25 ans inclus) :	Hommes.....	125
id. (id.) :	Femmes.....	139
	TOTAL.....	264

(1) Nous n'avons pas retrouvé le nombre des têtes observées par sexes séparés dans la table R. F.

Dans la table R F, le nombre des décès observés à ces mêmes âges était de 12, se composant en:

Décès observés (de 0 à 25 ans inclus):	Hommes.....	8
id. (id.):	Femmes.....	4
	TOTAL.....	12

Nombre des annés de vie soumises à l'expérience.—Les résultats sont les suivants:

Pour la table 1900:		
Les hommes ont fourni.....	419.264,5	années de vie
Les femmes ont fourni.....	672.606	d°
TOTAL.....	1.091.870,5	
Pour la table R F:		
Les hommes avaient fourni.....	244.292,50	années de vie
Les femmes avaient fourni.....	391.617,25	d°
TOTAL.....	635,909,75	

En particulier, pour les ages jeunes (0 à 25 ans inclus), les resultats sont les suivants:

Pour la table 1900:		
Les hommes (de 0 à 25 ans) ont fourni.....	30.879	années de vie
Les femmes (id.) ont fourni.....	36.272,5	id.
TOTAL.....	67.151,5	
Pour la table R F:		
Les hommes (de 0 à 25 ans) avaient fourni...	843	années de vie
Les femmes (id.) avaient fourni...	867,5	id.
TOTAL.....	1.710,5	id.

Subject, *General Discussion of, and explanations relative to, the work of the Committee of the Actuarial Society of America having charge of its recent investigation into the Experience of Thirty-four Life Companies upon Ninety-eight Classes of Risks.*

MR. JAMES CHATHAM (Great Britain):—

I arise at the opening of the discussion for the purpose of tending my thanks for the very handsome volume of statistics which has been presented to each member of the Congress, and I am sure that in doing so I echo the sentiments of all present.

It is very interesting to note the development of investigations into the mortality experience of insurance offices. First we had aggregate tables, as they are now called, of policies only. Then it was found that the duplicate policies were numerous and these were eliminated, and then the lives were divided into ages at entry.

Further still, in the recent investigation made by the Institute of

Actuaries and the Faculty of Actuaries jointly, the experience was divided into classes. In the volume which has been presented to the members of the Congress, another step has been taken by the division into occupations and other classifications. As to the results set forth in this volume I wish to refer to some points from my own experience.

The first is as to an investigation in one of the old established companies of Edinburgh. This was an investigation of what we called heavyweights, that is, people of abnormal stoutness, and where the standard by which we judged them was practically the same as the standard used by some American companies. We considered that a person was a heavyweight when his weight exceeded that standard by one-fifth. The result was the same as the experience in the volume to which I refer, namely, most unsatisfactory, and I think this is interesting as confirming in a remarkable degree the results on this point contained in that volume. Another investigation was into the mortality experience of officers of ocean steamships. It was principally confined to the lines between this country and England, and there again the experience coincided exactly with the American and was bad. An investigation of the experience on those connected with the liquor trade gave such bad results that the extra premium required was practically prohibitive, and there again the agreement with the American experience was close. Other investigations brought out similar results, namely, that the mortality among physicians was fairly heavy, and among pilots good, not more than the average, although in the latter case the number of observations was small, and too much weight must not be allowed.

Mr. Emory McClintock (United States) :—

The Organizing Committee, in presenting copies of this volume to the members attending the Congress, have thought that it may be interesting to have some discussion on such points as an examination of the work may have suggested to those present. A thing of this kind may naturally lead to additional ideas, to the perception of something obviously omitted, or of something which might have been done and which has only been partly done. There may be such suggestions, which, if they are now put on record, may be of use for any future investigations, wherever they may happen to be made. Again, during the remainder of the Congress, if members should indicate any further suggestions in writing to the Secretary, they will be welcome, and will go on record in the proceedings of the Congress as suggestions for future consideration by those having similar work in hand.

Apart from giving this invitation, I am here chiefly to answer questions concerning the work done, because extensive explanations regarding the subject matter have already been made in the Introduction to the book. Mr. Gore has had charge of the practical part of the work, the receiving of the information from the companies, the sorting of the cards, the printing, in fact, the whole of the executive work of the Committee. Mr. Gore was here this morning, when this subject was to have come up, intending to answer any questions which might be put concerning the mechanical details, which we all consider somewhat remarkable. He was compelled by positive business engagements to be absent this afternoon, but he can be spoken to at any future session of the Congress, and desires me to say that if there are members of the Congress who would like to examine the machinery at the office of the Prudential Company, on Saturday afternoon next, and if they will make an appointment with

him privately before that time, he will be glad to see them and show them everything.

MR. GEORGE KING (Great Britain) :—

I wish to ask about the matter of occupation, which relates only, as I understand it, to the occupation of the assured at the date of the policy. Has anything been done, or has any investigation been made into the continuity of the occupation?

MR. EMORY MCCLINTOCK (United States) :—

Whatever happened after entrance was disregarded. This investigation was instituted for the purpose of affording additional light to the officers having charge of the acceptance or rejection of risks proposed for insurance, and in order to give them additional light on that particular point, it was requisite just to take the papers as they were originally passed upon and see whether death occurred. The officers have to assume that what has happened in the past may in the same proportion happen in the future. If people change their occupation, that is one of the chances. All that the officers have before them, in order to examine into the risks proposed for insurance, consists in the papers presented. We accordingly took those papers just as they were originally accepted, without regard to subsequent changes of occupation or residence, or any other point affecting the risks, except so far as death may have occurred.

MR. GEORGE KING (Great Britain) :—

Mr. McClintock's clear answer has covered the question. I should like to make one or two remarks when the opportunity occurs.

MR. M. M. DAWSON (United States) :—

The new Select Table in Great Britain shows that the effects of selection are greater on lives taken at older ages than on lives taken at younger, and also shows in the Ultimate Table a considerable higher mortality than according to Farr's Healthy Males, which was taken as a standard by the Committee. Perhaps Mr. McClintock would like to tell us precisely how the latter was arrived at, and why the percentages of the standard mortality adopted for eliminating the immediate effects of selection were lower at the young ages.

MR. EMORY MCCLINTOCK (United States) :—

The standard adopted by the Committee, and the reasons for adopting it, are explained in the Introduction. It was intended for use by American Companies, and, consequently, the standard of comparison was that which was considered on the whole to approach most closely to American experience, which happened to be this Healthy Males table of Dr. Farr.

As regards the percentages taken during the first five years for eliminating the undue weight which would otherwise be given to those years, in which the normal mortality is less, owing to medical selection, those percentages, as will be seen, are distinctly arbitrary, based on the general principle of having smaller percentages for young ages than for old ages.

It is a matter of average and an arbitrary proceeding at the best, but the percentages taken by the Committee, after a good deal of consultation, seemed to be on the whole about fair, as shown by the previously known results on American experiences.

MR. CARROLL D. WRIGHT (United States):—

I have been stimulated to make a suggestion to this body by the admirable report of the Committee on the relation of Actual Deaths to Expected Deaths, and furthermore by a paper by Mr. Dawson which will be read on Friday and which I cannot remain to discuss.

In the last four or five years I have been called upon officially, several times, to furnish a rule or measure of damages, where a man has been killed in some mechanical trade or transportation through the negligence or carelessness of his employer. The courts are without that rule or measure of damages, and I have been unable to furnish it. Mr. Dawson in his paper says actuarial science furnishes the means of computing the pecuniary value of a life destroyed, the age, earnings and general condition of health at the time of death being given; and also means for estimating the pecuniary damage to earning power by reason of injuries, which results cannot be approximated with reasonable accuracy without recourse to actuarial principles.

I endorse that statement most fully, and I would suggest that there may be a method devised by skilful and scientific actuaries, to the end that we may have fairly authoritative tables giving the expectancy of life by trades, so that if a brick mason, for instance, is killed at the age of forty-four, the Courts can determine with reasonable accuracy the amount of damages to be awarded to his heirs on the basis of that expectancy.

But such tables would have to be supplemented by other tables determining the duration of trade life, how long a man lives on the average who enters a particular trade, at say age twenty-one years. We know what that is in some trades; perhaps as low as seven or eight years. We do not know what it is in others. These two tables of expectancy on the basis of the trade and the duration of life, would enable the Courts to estimate damages with some degree of reasonable accuracy, certainly with far more approximate accuracy than they are now able to do.

Furthermore from a sociological point of view such a work by the actuaries of this and other countries would knit the tie between life insurance and the people. It would show an endeavor on the part of insurance companies to be a benefit to humanity in this direction. I simply throw out this suggestion because I know the want and that the want may be supplied here and there. I know that some companies—because I have consulted their actuaries—feel that this is a necessary argument for the continued work of the Committee of the Actuarial Society. The Prudential Insurance Company, through Mr. Hoffman and Mr. Gore, are making some attempts in these directions, but it needs the co-operation of the actuaries of the different countries to ascertain with reasonable accuracy and with reasonable definiteness these tables of expectancy.

MR. GEORGE KING (Great Britain):—

I desire in the first place to join with Mr. Chatham in rendering thanks for the volume presented to us and to express my great admira-

tion at the way the work has been carried out and the extraordinary speed that has been developed in its preparation. We in England have been much interested in this matter, and I am very glad of this opportunity to thank Mr. Fackler and Mr. Gore for the communication which they have so kindly made to the *Journal of the Institute of Actuaries,* in explanation of the methods by which this experience was being extracted.

I asked a question of Mr. McClintock, not because I had much doubt of what the answer would be, but because I thought it desirable to have it on record, and we have learned from Mr. McClintock's very clear answer that we cannot take the tables of occupation for instance, and assume that we have the mortality of those occupations. The object of the inquiry has been different. It has been to enable an insurance company to judge of the risk as it is presented, and not the risk including all possible changes in the future.

One difficulty in the general use of the tables occurs to my mind. I think that the changes of occupation in the United States may differ very considerably from those in other countries. I doubt very much whether, for instance, in the case of butchers, we can make use of this table that is supplied to us and say that it is applicable to similar risks in the United Kingdom. It would be very useful if we could have some information as to the changes of occupation that take place, but in all countries it is very difficult to ascertain them.

Mr. Wright mentioned the matter of compensation for accidents to workmen and expressed the wish that we should have tables of mortality for occupations. We have, to a certain extent, that information in England in some of the reports of the Registrar-General. I suppose that those figures are as good as we really can expect in the present state of statistical methods, but there are certain difficulties in connection with them. In the first place we have some trades called by various names and the same name applied to various trades. Then we have only a decennial census, and there may be considerable changes in occupation between epochs. We have, of course, the occupations of the population at the census date, and the occupation at death of lives deceased; we compare these two, but they are not necessarily nor exactly comparable. But in applying these facts to questions of compensation, we must include the accidents required to be compensated for; otherwise we understate the liability of the employer. If we merely take the death rate in a trade and include in it the deaths that have to be compensated for, we understate, really, the liability that has got to be allowed for in preparing estimates of compensation. This is a small point, but one well to bear in mind.

Dr. James Raffmann (Hungary):—

Im Anschluss an die Worte des Herrn King erlaube ich mir zu bemerken, dass ich gerade diese Arbeiten, auf welche ich noch auf dem Brueseler Kongress Herrn Finlaison aufmerksam gemacht habe, einer methodischen Bearbeitung unterworfen habe. Ich habe als Grundlage meiner Berechnung, die sich auf Krankheitsfaelle und Unfaelle bezieht, die Tatsache angenommen, dass auch nach der bekannten log g die Ausgleichung ziemlich konstant

With reference to the remarks of Mr. King I would like to state that I have subjected those papers, to which I drew Mr. Finlaison's attention at the Brussels Congress, to a systematic treatment. As a basis for my calculations referring to sickness and accidents, I accepted the fact that following the well-known log g the equation is practically constant, so that a simple equation and comparison of these separate categories with the normal table, that

ist, sodass sich eine ganz einfache Ausgleichung und Vergleichung dieser einzelnen Berufe mit der normalen Tafel, d. h. mit der Tafel der allgemeinen Berechnung, machen laesst; d. h. wenn diese log g als konstant angenommen wird, so kann man die Sterblichkeit irgend eines Berufes in eine Kreislinie einzeichnen. In dieser Form habe ich dann alle diese Sterblichkeiten tabelliert und habe fuer jeden einzelnen Beruf auf Grundlage dieser vier grossen Abteilungen, die hier tabelliert sind, die Sterblichkeit von 25—30, 30—35 u. s. w. mittelst der Methode der kleinsten Quadrate bestimmt. Man kann aber auch die log l ebenso in eine einfache algebraische Verbindung bringen, sodass man eine ausgeglichene Tafel fuer jeden Beruf hat, wenn man die Berufe der allgemeinen Tafel hat. Jetzt aber, um zur Praemienberechnung ueberzugehen, so habe ich konstatiert, dass die Sterblichkeit einer gewissen Beschaëftigung gleich einer einfachen Funktion ist, d. h. die Sterblichkeit einer gewissen Beschaeftigung ist gleich der Beschaeftigung einer allgemeinen plus einer konstanten Groesse.

Ich habe hier die Tafel fuer die einzelnen Berufe, wie ich sie berechnet habe. Hier ist z. B. No. 20. Die Berufe sind tabelliert, wie sie in dem Supplement verzeichnet sind, und das ist $\frac{3}{4}$ der Sterblichkeit des mittleren Berufes minus 1,3-10; oder aber die Sterblichkeit der Agrikultur-Bevoelkerung ist gleich $\frac{3}{4}$ der Sterblichkeit der mittleren Berufe minus 1,3-10,—wenn ich die gewoehnliche Bevoelkerung um 5 Jahre jünger annehme und noch 3^m abnehme. Die einfache Praemienberechnung ergibt sich dann in einer ganz einfachen Form. Die konstante Differenz, die ich habe, die Alterserhoehung, ist dann ganz einfach auszudruecken.

Die konstante Veraenderung kann man durch die Veraenderung des log 5 finden. Man braucht nur um $\frac{1}{2}\%$ in der Verzinsung niedriger zu gehen und erhält dann dx. Wenn also eine Lebenstafel vorhanden ist fuer die verschiedenen Zinsfuesse, so haben wir durch diese Methode ohne alle Zahlen fuer jeden einzelnen Beruf die betreffenden Prämien.

is, the table based on general calculations, can be made; namely, if this log g is supposed to be constant, the mortality in any vocation whatever can be marked in a curve. In this form I have tabulated all these mortalities and determined, by means of the method of least squares, on the basis of the four great divisions scheduled here, the mortality from 25-30, from 30 to 35, etc., for each single vocation. Log lx may, however, also be used for a simple algebraic combination, so as to produce an adjusted table for each vocation, if one has the vocations of the general table. Now, to proceed to the calculation of premiums, I have ascertained that the mortality in a certain occupation is equivalent to a simple function, that is, the mortality in a certain occupation is equivalent to that in occupations taken generally, plus a constant quality. I have here the table for separate vocations, as calculated by me. Here, for instance, is No. 20. The vocations are scheduled, as listed in the supplement, and that (No. 20) is 2-3 of the mortality of the general vocations minus 1.3; or the mortality of the agricultural population is equivalent to 2-3 of the mortality of the general vocations minus 1.3—if I suppose the normal population to be five years younger and, moreover, deduct 3m. The calculation of the premium is then made in a very simple manner by taking into account the constant difference in my estimates, namely the supposed lower age.

The constant variation can be found by changing log 5. One only has to calculate the interest $\frac{1}{2}$ per cent. lower to obtain dx. If, therefore, there is a life-table for the various rates of interest, we obtain by this method without any figures the respective premiums for every single vocation.

MR. JESSE J. BARKER (United States) :—

The work of the Committee of the Actuarial Society and the admirable results achieved, will, I hope, result in the elimination of some errors which have crept into the regulations of life insurance companies. It appears that the constant effort of the management of the life companies is directed on the one hand towards securing the largest number of applications and on the other in excluding all except those who are free from all possible blemish, and that the greatest refinements of medical science are directed to that end, as if it were the object of a mutual life company to make money and to keep it.

Having selected as a basis of premiums and reserves a mortality table reflecting as nearly as can be determined the mortality that should be experienced, it seems safe and proper that an effort should be made to extend the advantages to all applicants who, in the aggregate, would not be likely to exceed the expected rate of mortality.

The selection by medical directors, to my mind, is valuable only because it accepts risks that would be thrown out by less experienced officers. It is easy enough for any one to approve of first class risks. The benefit of the examination by classes, such as has been undertaken by the Actuarial Society, will help to extend the benefits of life insurance by eliminating some of the manifest errors of opinion as to the serious effects of certain acute diseases, as well as those due to irregularities of the heart, often functional and not organic; also as to some diseases supposed to be hereditary and not found to be so in certain instances investigated.

In my opinion, the closer the actual mortality experienced approaches the expected, the greater will be the place of life insurance in the economy of the world and the more good will be done.

I do not wish to be considered hypercritical, nor to seem to urge the acceptance of impaired risks, but it is apparent that greater leniency than now prevails may with safety be exercised. Already the average rate has been brought down to about eighty per cent. of the tabular rate. If by any possibility a company could reduce its mortality to *nil*, it would do no good and would have no right to exist.

MR. AMÉDÉE BÉGAULT (Belgium):—

Je désire appeler l'attention du Congrès sur le travail important, entrepris par le Comité Exécutif des Compagnies Autrichiennes d'Assurances sur la Vie, pour la construction d'une table de mortalité. Le travail proposé en 1900 a reçu l'adhésion de 28 Compagnies d'Assurances, dont 18 Autrichiennes, 2 Hongroises, 5 Allemandes, 1 Anglaise et 2 Américaines. (La Mutual Life et la New-York.) C'est au commencement de l'été de 1901 que les cartes ont pu être distribuées et au 31 Mars 1903, 600,000 cartes étaient rentrées, prêtes à être mises en œuvre pour la construction des tables. Celles-ci sont au nombre de trois:

I wish to call the attention of the Congress to the important work performed by the Executive Committee of the Austrian Life Insurance Companies in drawing up a mortality-table.

The sugestion of the work in 1900 met with the approval of 28 Insurance Companies, of which 18 were Austrian, 2 Hungarian, 5 German, 1 English and 2 American (The Mutual Life and The New York Life). At the beginning of the summer of 1901 the cards were distributed, and on March 31, 1903, 600,000 cards had been returned, ready to be utilized in the construction of the tables. These latter are three in number:

(a.) Sexe masculin, quel que soit le genre d'assurance.

(b.) Sexe masculin, assurances mixtes et assurances pour la vie entière à primes en nombre limité.

(c.) Sexe féminin.

Bien que le travail soit fait au nom du Comité Exécutif des Compagnies Autrichiennes, je crois pouvoir affirmer que, sans l'indomptable énergie dont a fait preuve le Président, M. Klang, jamais semblable travail n'aurait été entrepris ni mené aussi rapidement. C'est sur lui, personnellement, que rejaillit l'honneur de cette importante oeuvre scientifique et je le prie de m'excuser de l'atteinte que je porte à sa modestie.

(a.) Male sex, regardless of the kind of insurance.

(b.) Male sex, mixed insurances and insurances for life with limited premiums.

(c.) Female sex.

Although the work was done in the name of the Executive Committee of the Austrian Companies, I think I may assert that, without the indomitable energy evinced by its president, Mr. Klang, a similar task could never have been undertaken nor accomplished so rapidly. To him personally the honor of this important scientific production belongs, and I crave his pardon for my attack on his modesty.

Subject, *The Probable Future Course of the Interest Rate.*

Papers.

Der wahrscheinliche Lauf des Zinssatzes in der Zukunft, by Mr. Grossman of Austria.

Note sur les variations du taux de l'intérêt en Belgique pendant la période contemporaine, by Mr. Hankar of Belgium.

The Probable Future Course of the Rate of Interest, by Mr. Burn of Great Britain.

DR. ALFRED MANES (Germany) :—

Wenn es nicht gelungen ist, eine Abhandlung aus Deutschland ueber den wahrscheinlichen Lauf des Zinssatzes in der Zukunft zu erhalten, so ruehrt das wohl daher, dass der Prophet in seinem Vaterlande nichts gilt. Aber auch ausserhalb des Vaterlandes moechte ich nicht gern als Prophet auftreten, sondern Ihnen nur an der Hand eines Ihnen wohl noch nicht bekannten Buches, eines erst vor ganz kurzer Zeit erschienenen Werkes aus der Schule des Herrn Prof. J. Conrad in Halle, einige Saetze vortragen, welche die geschichtliche Entwickelung des Zinsfusses im 19. Jahrhundert betreffen. Das Buch ist betitelt:

Ueber die Hoehe der verschiedenen Zinsraten und ihre wechselseitige Abhaengigkeit.
Die Entwickelung des Zinsfusses in Preussen, von 1807 bis 1900.
von
Ernst Voye.
Jena, 1902. Verlag von Gustav Fischer.

If we have failed to obtain from Germany an essay on the probable course of the rate of interest in the future, it may be attributable to the fact that a prophet is without honor in his own country. But also abroad I would not like to pose as a prophet, but only wish to quote a few sentences concerning the historical development of the rate of interest in the nineteenth century from a book probably not as yet known to you, a work issued quite recently from the school of Prof. J. Conrad at Halle. The book is entitled:

"On the Extent of the Various Rates of Interest and their Reciprocal Dependence on Each Other.
The Course of the Rate of Interest in Prussia from 1807 till 1900.
by
Ernst Voye.
Jena, 1902. Gustav Fischer, Publisher."

The author confines himself to making the rate of interest on the Prussian government bonds the basis, because, as one of the principal rates on long-

Der Autor beschraenkt sich darauf, den Zinsfuss der preussischen Staatsrente zugrunde zu legen, da dieser, als eine der wichtigsten Zinsraten an langjaehrigen Kapitalanlagen, sich durch das Mittel der Kursgestaltung der Entwickelung des Geldmarktes eng anzupassen und dieselbe unmittelbar wiederzuspiegeln seiner Ansicht nach imstande ist. Er teilt das Jahrhundert in vier Perioden ein: die erste reicht von 1807 bis 1844; in ihr sinkt der Zinsfuss ganz allgemein. Er steht zufolge aeusserst unguenstiger politischer Verhaeltnisse in der Kriegszeit (bis 1814) 8% hoch, und sinkt dann bis 1844 auf 3½% herab. In der zweiten Periode, von 1845 bis 1870 hebt er sich, mehrmals von ruecklaeufiger Bewegung unterbrochen. Die Jahre von 1871 bis 1895 bezeichnen die dritte Periode, in welcher eine fast ununterbrochene Abwaertsbewegung zu konstatieren ist, und der Zinsfuss bis auf 3%,—das Minimum des ganzen Jahrhunderts,—herabsinkt.—Schliesslich finden wir in der vierten Periode, von 1896 bis 1900, eine ziemlich schnelle Aufwaertsbewegung bis ueber 3½%.

Der Verfasser hat meines Erachtens in hoechst zweckmaessiger Weise das von dem Herrn Vorredner befolgte Prinzip, den Zinsfuss rein national zu betrachten, erweitert, und betrachtet den Zinsfuss als eine vom internationalen Geldmarkt abhaengige Erscheinung. Er konstatiert, dass in Amerika, Russland, Frankreich und Oesterreich der Zinsfuss gleichfalls seit 1870 gesunken ist, und gibt hierfuer eine hoechst lehrreiche, graphische Darstellung. Das Buch schliesst mir dem bemerkenswerten Satz:

"Der immer weiter um sich greifende Verkehr macht aus den nationalen Geldmaerkten einen mehr und mehr sich schliessenden internationalen Geldmarkt, sodass sich der Zins der einzelnen Laender auszugleichen trachtet. Ob jemals noch der Zinsfuss eines der Kulturstaaten um 4% von dem des anderen abweichen wird, wie es 1869 zwischen den Vereinigten Staaten und England der Fall war, bleibt doch hoechst fraglich. . . . . International sich herausbildende Zinsfussentwickelterm investments, it can, in his opinion, adapt itself closely, by means of the stock-exchange quotations, to the fluctuations of the money-market and reflect them directly. He divides the century into four periods. During the first, from 1807 to 1844, there was a general decline in the rate of interest which, owing to the extremely unfavorable political relation (until 1814), was as high as 8 per cent. and then dropped about 1844 to 3½ per cent. In the second period, from 1845 to 1870, it rose, interrupted several times by a retrograde movement. The years from 1871 to 1895 comprise the third period in which an almost uninterrupted decline is to be noticed and the rate of interest dropped to 3 per cent., the minimum of the entire century. Finally we observe in the fourth period, from 1896 to 1900, a rather rapid upward movement to over 3½ per cent.

The author has, in my opinion, most appropriately extended the principle followed by the last speaker, namely to consider the rate of interest from a purely national standpoint, and he looks upon the rate of interest as a matter depending on the international money-market. He states the fact that in America, Russia, France and Austria the rate of interest has also declined since 1870 and supplies a most instructive graphic exposition. The book concludes with the following noteworthy passage:

"Constantly increasing commerce converts the national money-markets into an international money-market contracting more and more, so that the rates of the separate countries tend to adjust themselves each to the other. Whether the rate of interest in one of the civilized states will ever again deviate from that in another by 4 per cent., as was the case in 1869 between the United States and England, is highly questionable. . . . . The development of an international rate of interest produces the natural result that, by an extension of the market, the rate of interest in the separate countries is secured against too low a decline as well as against an immoderate rise. . . . . The reaction

ung hat natuerlich zur Folge, dass durch eine Vergroesserung des Marktes der Zinsfuss der einzelnen Laender ebenso vor allzutiefem Herabgehen, wie vor uebermaessigem Aufsteigen bewahrt bleibt. . . . . Die Rueckwirkung des auslaendischen auf den inlaendischen Zinsfuss kann demnach nur eine guenstige, keineswegs aber eine ueberwiegend unguenstige sein."

of the foreign upon the domestic rate of interest can, therefore, be generally only favorable and by no means predominantly unfavorable."

MR. FLORIMOND HANKAR (Belgium) :—

J'ai examiné dans mon rapport la question de la variation du taux de l'intérêt en Belgique pendant la période contemporaine.

Le sujet que j'ai traité ne comporte que la première partie de la question qui doit faire l'objet de la discussion du Congrès, aujourd'hui. Cette question, à laquelle je m'intéresse depuis longtemps déjà, est, il est vrai, de celles sur lesquelles il est assez difficile d'obtenir des renseignements précis, même lorsqu'on cherche la raison d'être de faits qui se sont produits il y a peu d'années. J'ai pensé, qu'il pouvait y avoir utilité à donner au Congrès quelques renseignements exacts sur la variation du taux de l'intérêt de la Rente Belge. J'ai choisi la seule rente qui n'ait pas été l'objet d'une conversion. Le taux effectif de l'intérêt produit par une Rente d'Etat ne pouvant être considéré comme représentant exactement le taux moyen des placements sûrs à un moment donné, j'ai fait un rapprochement entre le taux effectif de la Rente Belge 3 avec le taux moyen des placements de la Caisse d'Epargne de Belgique.

D'une manière générale, je pense qu'un des avantages des Congrès est de permettre d'obtenir des renseignements précis de ceux qui ont déjà étudié la même question dans leur propre Pays. M. Manes a donné communication d'études se rapportant au même sujet. Le travail de recherche dans les documents étrangers est particulièrement ardu et les erreurs sont difficiles à éviter.

La question spécialement posée au

In my report I have investigated the question of the variation in the rate of interest in Belgium during the contemporaneous period.

The subject, as I have treated it, covers only the first part of the question to be discussed by the Congress to-day; that question in which I have taken an interest long since, which is, in truth, one of those on which it is rather difficult to obtain accurate information, even if one looks for the cause of facts that have come to light within a few years. I thought, for this reason, that it might be useful to give to the Congress some accurate information on the variation in the rate of interest on the Belgian State Loan. I have selected the only security which has not been the object of a conversion. As the actual rate of interest on a state security cannot be considered as representing only the mean rate of secure investments at a given moment, I have made a comparison between the rate on the 3% Belgian State Loan with the mean rate on the investments of the Savings Bank of Belgium.

In a general way, I think that one of the advantages of the Congress is that it permits the obtaining of exact information from those who have already studied the same question in their own country. Dr. Manes has communicated studies referring to the same subject. The work of research in foreign documents is particularly arduous and errors are difficult to avoid.

The special question put to the Congress had in view to determine what

Congrès avait pour objet de déterminer quel serait le taux de l'intérêt futur. Cette étude me semble ne pouvoir être menée à bien que si elle est précédée de recherches étendues sur les variations du taux du loyer de l'argent dans le passé. J'exprime le voeu de voir mes Collègues des Pays Etrangers qui s'intéressent à la même question des placements de bien vouloir examiner si elle n'est pas de nature à faire l'objet d'une question spéciale du prochain Congrès.

Il est assez difficile de savoir ce qui se passe dans les pays étrangers. Le travail de M. Manes que j'ai signalé déjà indique que le taux effectif de l'intérêt en Amérique, pour les fonds Américains, est inférieur à 2%. Cela est-il exact? Voilà première question que je voudrais poser. L'examen du diagramme annexé à cette étude montre que le taux effectif de la Rente d'Etat serait, pour les Etats-Unis, inférieur à celui des autres Pays examinés. N'y a-t-il aucune raison spéciale expliquant ce fait? On sait, en effet, que le taux moyen des placements dans ce pays est supérieur à celui des autres pays d'Europe.

Je désire encore ajouter un mot. En Belgique, en ce moment, le Gouvernement est sur le point de promulguer une loi sur les placements de la Caisse d'Epargne, et la question de l'acquisition par la Caisse d'Epargne, de fonds d'Etat étrangers, fera, à bref délai, l'objet des délibérations de nos Chambres législatives.

will be the future rate of interest. It seems to me that this theme cannot be pursued to any purpose unless preceded by extensive researches as to the variations in the rates on loans in the past. I would express the wish to have my colleagues from foreign countries who are interested in the same question of investments, kindly inquire if it is not of a nature to make it the object of a special investigation by the next Congress.

It is rather difficult to know what is going on in foreign countries. The essay to which Dr. Manes alluded, points out that the rate of interest in America, on American securities, is below 2 per cent. Is that correct? This is the first question I would like to ask. An examination of the diagram appended to that essay shows that the actual rate on government security would, for the United States, be lower than that of the other countries investigated. Is there not a special reason explaining this fact, when the mean rate on investments in this country is higher than that in the countries of Europe?

I wish to add a remark. In Belgium, the government is at the present moment about to promulgate a law on the investments of the Savings Bank and the question of the purchase of foreign state securities by the Savings Bank will, before long, constitute the subject of deliberations in our Legislative Chambers.

Mr. Joseph Burn (Great Britain):—

I think that it will be useful if the subject can be discussed more particularly with reference to the causes of disturbance of the rate of interest which have taken place in the past. If this phase can be dealt with in a critical manner we can show that, given certain disturbances, we may reasonably expect certain results as to the rate of interest to be caused thereby.

Mr. Niel Ballingal Gunn (Great Britain):—

This is probably the most important practical subject that the Congress has to discuss, for a variation in the rate of interest has more effect on the business of life insurance than the rate of mortality. The rate

of mortality varies but slightly in various countries, but the rate of interest has varied very considerably, even within the last ten years.

I can hardly imagine that the artificial conditions which have caused the great fall in the rate in England and America are likely to recur for a considerable period. The lenders have learned a lesson and they are not likely to let the rate of interest go down again to two per cent.

One of the main points which have to be considered is undoubtedly the question whether we should aim at investing our money in long or short dated bonds? If interest is likely to fall, the proper course would be to put as much money as possible into bonds that are permanent, or as nearly so as are obtainable. If, on the other hand, interest is likely to remain as at present, or to rise, we should invest for short periods and have the opportunity of reinvesting when the rate goes upward.

So many considerations, all tending in different directions, complicate the subject that it is impossible to foretell the future course of the interest rate, and all we can do is to talk around the subject and perhaps by looking at the causes of variation deduce some guide for the future.

One of the main considerations acts in two different ways. For instance, if you take good trade; good trade causes circulation of capital, and then creates demand for capital, which naturally tends to cause an increase in the rate of interest. On the other hand, after the good trade has lasted for a certain period, it results in an increase of the savings of the country in which the good trade exists, which again decreases the rate of interest and thus modifies the effect of good trade.

Then another consideration which helps to keep up the rate of interest is that new nations are developing. Their development requires capital, and as time goes on they become so established that their securities become what we call "gilt-edged." Take for instance the Argentine and other South American republics. I suppose twenty or thirty years ago no insurance office would have thought of investing in South American Railway securities. There is now a considerable amount of these securities held in the United Kingdom, and it would be interesting to know if they are held in the United States and on the continent of Europe.

Briefly we may say that three elements affect the general course of the rate of interest; new industries, stimulating trade and demanding capital; the development of new countries, and the destruction of capital caused by war. The latter unquestionably has the effect of aiding and adding to the rate for a time.

Another consideration is sometimes adduced, namely, the gold production of the world. But the gold production, as it does not really increase the wealth of the world, cannot permanently affect the rate of interest.

Mr. J. G. Van Cise (United States):—

The rate of interest realized by United States bonds cannot be regarded as the test of what money is worth in the United States. There are various reasons why United States bonds yield a low rate. They are not taxable; the debt is comparatively small and offers the best security of any investment that can be made. In addition, there is a forced market for these bonds through the fact that they are the security held by the National banks for the issue of notes.

This matter of interest is steadily becoming a grave question for actuaries to consider especially in the United States. There is an in-

creasing tendency in this country to take out policies for investment purposes; not only is there an immense business done in endowments in the United States, but now a large number of policies are issued which are payable in bonds or installments, and the companies are made thereby trustees and custodians of these funds for long periods, even up to fifty years. For this reason it becomes of great importance to consider what the future rate of interest is likely to be.

A matter of history is the wonderful decrease in the rate of interest which has taken place in the United States during the last thirty years. For instance, the railroads have been for some time borrowing money at three and a half and four per cent. on exactly the same securities on which they paid, thirty years ago, six and seven per cent. On mortgages on real estate, on which thirty years ago the owners were glad to borrow at ten and twelve per cent., they are paying now, on exactly the same security, only five and six per cent., and in some cases even less. There has been a gradual and steady decline in the rate of interest in this country in the last thirty years on all classes of investments, the reduction amounting to one-half of the former rate.

No one believes that there will be the same decline in the future that there has been in the past, and we all believe, of course, that the rate of interest will go up and down, due to special causes; but there is one new factor we have now to consider, namely, that it has now become a world question rather than a local question. The facility with which money is transferred from one country to another and the knowledge people now have of investments in different countries, have a tendency to keep the rate of interest at about the same level, on the same class of securities, throughout the world.

My conviction is that life companies ought to err on the safe side; though interest may rise, we should assume in the valuation of reserves a low rate and be conservative. My personal conviction is that, for all new business at least, we should not assume a rate higher than three per cent. for the calculation of reserve liabilities.

The very fact of the tremendous accumulation of life insurance funds has a tendency to decrease the rate. In Great Britain it has been stated that the rate fell one-half per cent. during a certain period of time, and that the decrease was attributed directly to the fact that the life insurance companies of Great Britain had such a large amount of money to invest. I think that will be the tendency in this country. There are three companies in this city to-day that have assets of more than one thousand million of dollars, are increasing every year and which have to be kept invested. That fact alone must have great influence upon the future interest rate, and so it seems to me that in the future in the United States it will probably be lower.

Mr. T. B. Macaulay (Canada):—

Mr. Burn's paper is a remarkably complete and thoughtful summary of the financial position as it at present exists. We have, however, more concern with the future than with the past and present. What course will the rate of interest follow, in all probability, from this time on? Will it increase, remain stationary for some time, or decline? Most of us will, I think, agree that it has, so far as we can see, reached its zenith and is at least not likely to go higher for the time being. There are several reasons which lead to this conclusion. First, the two great wars, the South African and the Philippine, are now ended and

the financial drain caused by them has largely ceased. Then, too, there are indications, slight as yet, it is true, that the present epoch of industrial prosperity has passed its best, and that reaction must be looked for. I cannot tell when it will begin to be seriously felt—in one year or in five years—but both history and present indications lead us to expect it. It must, however, be clearly borne in mind that the present trouble in the stock markets is financial and not industrial. The world, and this continent in particular, is in the position of a man who has been developing a very satisfactory business, but at a more rapid rate than his finances permit, and who is now having trouble with his bankers, though his business itself is very profitable. But an industrial reaction must come and with it a decided lessening of the demand for capital. For these reasons I think we are probably safe in concluding that the rate of interest on permanent investments is not likely to go higher and that as time progresses it will probably recede somewhat.

Mr. Burn thinks that there will be a fall, small but rapid, within the next year or two; then a less rapid fall, lasting possibly for several years. Prophesying is very dangerous work, but I would be inclined to reverse the order, and to expect a very gradual decline at first, becoming more rapid when the hard times make themselves felt. We must remember that while the wars are no longer making great demands, the requirements of the industrial expansion of the country are likely to be still very great. When I say country, I mean both Canada and the United States.

Furthermore, there is the great bulk of "undigested securities," of which we have heard so much. We are apt to think of them as being unsound, and many of them are so, but if we speak of bonds only, a very large proportion are perfectly secure and will ultimately have to be absorbed. The country is having financial indigestion, not so much because the food is bad as because there has been too much of it. Still further, it must be remembered that the public is only beginning to realize thoroughly that the average rate of interest has risen and is likely to demand higher rates now than it was formerly satisfied to take. It follows, I think, that the decline will not be rapid for some years.

However, that is a minor matter. The chief point for us to decide is whether or not the rates prevailing, say five or ten years hence, are likely to be less than the present rates. I believe they will be, and if this opinion is correct, it follows that life assurance companies should carefully avoid all short-term investments and confine themselves to those that are absolutely secured, and run for long terms, such as long-dated bonds and guaranteed stocks. In this way it will be possible to retain for many years to come the benefit of the high rates of interest now prevailing. I think that the companies which follow this course will reap a rich reward in the future.

Mr. Charlton T. Lewis (United States):—

I should not trespass on your time with further discussion on this subject, but that I heartily agree with the remark of Mr. Gunn that this is a fundamental question, and one of the most important which claims the consideration of an international body of actuaries. In this connection, I cannot forbear to remark that the opening sentences of the very valuable and suggestive paper of Mr. Burn seem to me to be somewhat misleading in their tendency, inasmuch as they give the impression that the rate of interest is of less importance to the actuaries and to the

companies under some circumstances than others, and that in particular it grows in importance with the growth of the company and the accumulation of assets.

I think that on reflection it will be seen that the essential and fundamental importance of this question varies not at all with the conditions of the company. If the company covenants that at some future date it will pay a certain amount, it must have the present value of that payment secured to it in some form, and the determination of that present value depends upon the rate of interest which is assumed. It matters not in the general result whether it be secured to the company by the purchase of an annuity upon the life of the person insured, or by the purchase of an annuity from the government under which it is organized, or by some other investment.

The essential thing is that the premiums of the company are determined by the rate of interest assumed, and, in the second place, the income of the company upon investments is determined by the rate of interest really received. And a very simple calculation will show us that the difference between the crudest mortality table which has ever been used for practical purposes—yes, we may go back to the old Breslau or the Northampton table, and compare it with the Healthy Districts Table which has been adopted as a standard by the American Committee on Tables, and in practical results the difference between them will vanish in comparison with the difference between two rates of interest within limits which have actually been adopted by American companies.

This question then is in all respects fundamental, and there is nothing which should take precedence of it.

Now, Mr. Burn's suggestion with regard to the method of discussion seems to me to be in a high degree illuminative and suggestive. We must seek the causes of fluctuations in the rate of interest. We must inquire what influences in the past have given occasion to one rate rather than another, have made interest higher or lower in particular markets or at particular periods of time and, in this way, if we can, reach an understanding of the general laws controlling it.

According to the unanimous testimony of economists, the normal rate of interest is a function of the assured average rate of productiveness of capital. It does not, of course, fully represent that rate. Men cannot afford to borrow capital and pay for it the whole product which they obtain from its use. It is a function of that rate, and is limited by it. But it is not sufficiently considered by economists, and I think has not yet sufficiently been dwelt upon in this discussion, that the actual rate of interest always depends upon the estimates formed in men's minds of what the future productiveness of capital will be. It is not by ascertaining what they have produced by the use of capital; it is by estimating what they are going to produce by the use of the capital they now seek, that men determine what rate of interest they will offer and pay. And this introduces a new element into the problem, a human element which is of the first importance. The product which a man expects from the use of the capital he borrows is the limit beyond which he will never agree to pay for it.

The consequence of this is that sanguine expectation determines a high rate of interest. When this sanguine expectation is general in any community, it produces an insatiate demand for capital; a demand which will pay the highest rates for its use. Whenever this sanguine expectation is disappointed or checked, then this special demand for capital is destroyed and the market for loans loses its animation and its strength.

Now, this is a general fact, and the supreme fact of the problem. It controls the rate of interest always and everywhere.

If you will examine the tables and documents presented to us in the course of this discussion, you will find a substantial agreement among them, in sustaining the general fact, that epochs of discovery, of invention, of enterprise, alternate in human history with epochs of stagnation, and that the rate of interest is a fluctuating rate, rising and falling with the hopes and expectations of the mercantile community.

It has been often asserted in the public press, and sometimes in the writings of economists, and traces of the belief appear in several of the papers before us, that there is a progressive and secular tendency to diminution in the rate of interest. This theory has been widely accepted among financial men, yet on examination it proves to be without foundation. All these diagrams, all these tables, the whole history of the rate of interest, go to disprove it.

For example, the modern records prove, as a uniform and general fact, that rates of interest rose progressively throughout the civilized world during the Napoleonic wars, until they culminated in the years 1814 and 1815. Since that time the commercial world and the political world have been less disturbed, though such disturbances have still been wide and frequent, by wars and rumors of wars; and we can trace in these disturbances the direct cause of fluctuations in the rate of interest.

From 1815 to 1845, for thirty years, there was throughout the civilized world, in Europe as well as in America, a general and progressive decline in the rates of interest, until in the years 1845 and 1846, in the commercial markets of the United States the rates of interest were as low as they have been at any time since that date.

From 1846 to 1871, a space of about twenty-five years, there was a general and progressive rise in the rate of interest, which was pretty uniform in the United States, and followed very closely the progressive advance on the continent of Europe. It was marked also in Great Britain, as shown by the rates in London, throughout that period the financial centre of the world.

During the next twenty-five years, from 1872 down to 1897, there was a progressing decline in the rates of interest in all these markets. The coincidence was marvellous. The whole civilized world moved together. The rates for loans on bond and mortgage in the centre of Germany agreed in their tendency with those in the centre of Kansas. The rates of discount in Wall Street, New York, moved to a large extent in conformity with those in Leipzig and in Paris. For those twenty-five years there was throughout the civilized world a continuous, progressive and tolerably uniform decline in the rate of interest.

Now, from the year 1896 or 1897, down to the present time, there has been in all these markets a progressive advance again in the rate of interest. This is so marked that it is astonishing to me that the facts have not obtained more prominence in this debate.

It is certain that every government loan in the civilized world, with the single exception of the loans of the United States of America, has declined progressively and materially in market price in the last five years. That is to say, the rate of interest paid by the governments upon these loans has advanced. The reasons why no such decline has taken place in the price of United States bonds have been in part given by Mr. Van Cise. It is mainly because those bonds are "cornered" and have a special artificial market provided for them by legislation, and by peculiar circumstances which counteract the influences affecting other government loans.

Now, without dwelling at length on this recent reversal of the movement of interest rates, which to my mind is exceedingly suggestive and important, I wish to call your attention to certain current fallacious beliefs which this fact completely negatives. Even in the writings of economists, we find theories and beliefs presented which are wholly inconsistent with this experience.

The first of these is the theory that abundance of money produces low rates of interest. It is, of course, a fact that in a narrow market, where there is a large amount of capital seeking investment, and a limited demand for it, the rate of interest will for the moment decline. But in the world at large, taking all nations and all markets together, abundance of money has no tendency whatever to lower the rate of interest.

Consider one fact of recent history which must be familiar to the memory of the older members. In 1848-9, discoveries of gold in far greater amounts than had ever been known were made in California and in Australia, and the immediate result was that the annual supply of gold, the standard money of the civilized world, was multiplied by twelve.

What followed? In London in April, 1852, and January, 1853, the bank rate had fallen to two per cent., and eminent writers on finance reasoned that the great influx of gold which had begun would lead to a glut of capital in the loan markets, such that it would never be possible to see good interest rates for money again. Money was to be a drug, and thereafter two per cent., they insisted, would be the common rate of interest upon loans.

What was our actual experience? Before the end of the year 1853 the minimum rate on loans at the Bank of England advanced to five per cent., and for forty years after that time discounts in London never touched the low rate of 1853, although this great influx of gold went on increasing for ten years thereafter, and surpassed all the predictions of the economists of that date. Many similar facts might be cited. But this one is a world-wide fact, a crucial experiment of the broadest and most conclusive character.

Again, another theory by which many economists have been influenced, and which is countenanced in at least two of the papers before us, is, that the accumulation of capital, in itself, has a tendency to lower the rate of interest, and that, as the world grows richer, the rate of interest must progressively decline.

If there is any established fact in the financial history of the world, any general truth which is demonstrated by its experience on the largest scale, it is that this theory is unfounded. Is there a man with any knowledge of economic history who doubts that the world's wealth made enormous progress in the century from 1760 to 1860? Is there any possible question that the growth of capital in the period which some of us are able to remember, from 1845 to 1870, was rapid and magnificent, far outstripping the growth of population? Yet, if we inquire into the markets of each of these epochs, we shall find that, in each case, the rate of interest at the later date was materially and universally much higher than it was at the early date.

It is not necessary to go into further details. No other witnesses are needed. These facts alone are conclusive upon the question. The whole activity of the commercial world had been devoted to the production of wealth, with such conspicuous success that capital, property, money, riches in every form, had been multiplied in all the civilized nations, and yet after a generation, in each case, the rate of interest had

risen materially, until at the end of each period it was from one-fourth to one-third higher upon the general average of the best selected securities than it had been at its beginning.

These facts, which cannot be disputed, show that, while the normal rate of interest is a function of the average productiveness of capital, its fluctuations depend, not simply day by day and month by month, and even year by year, but sometimes from generation to generation, upon other influences. These are mainly the forces which shape the imaginings and expectations of men. The most potent of them is the spirit of enterprise, the degree in which the tendency prevails among men to reach forward energetically for the future and to shape it for themselves with confidence.

The most memorable instance in history in which this influence has shown its power over the rate of interest was the railroad construction period, which began about 1845 and culminated about the year 1872. The enthusiasm and speculative fever of the time was universal. Men everywhere were in haste to convert their movable capital into fixed capital, to turn the wealth they had into works which should produce more wealth, until the scarcity of movable capital in the markets became extreme, and the pressure for it brought about a crisis.

It is these waves of feeling and ambition, these fluctuations of the spirit of enterprise, which are supreme in the control of the rate of interest. They affect it more than even short and local wars. Nothing less than a general catastrophe, such as the Napoleonic wars in Europe, has ever been so potent in determining the rate of interest in the commercial world as great changes and fluctuations in the spirit of enterprise.

Now, it so happened that from 1872 down to a comparatively recent period, about 1894 or 1895, there was a decline in the spirit of enterprise throughout the commercial world. We remember how stagnant invention was, how dead experiment was, how railroads ceased to be built, how machines ceased to be invented, and how there was an extreme caution in financial circles. Under these circumstances, the quiet, timid and gradual accumulation of movable capital went on, the markets for loans were glutted by it, and the rate of interest fell, until, in the year 1896 bank rates in many places were down to one per cent., and generally a rate of two per cent. was thought high for well secured temporary loans. We remember how, at that time, the spirit of enterprise awoke throughout the world; we remember how the genius of electricity startled the minds of men; a general impulse was felt to manufacture, to build, to develop, to expand, to turn floating into fixed capital throughout the civilized world. From that date to this enterprise has been in a ferment of activity, consuming its floating capital, turning its accumulations into fixed capital, constructing railroads, ships, mills, houses, machinery, at a rate which crystallizes into solid forms in one year the flowing wealth of many years. Hence, since the early days of that movement, certainly from 1897, there has been a progressively growing scarcity of capital, until now it has begun to be felt in every country in the world.

Thus, as I said before, there is no government loan on earth, except that of the United States, which has not materially and steadily declined since 1897.

There is not a market in which call loans, temporary loans, have not advanced in price above what they were in 1897, with some steadiness, although with wide fluctuations. There is hardly a first-class bond which was deemed in 1897 and '98 a gilt-edged security and was purchased for permanent investment at that time, which has not so declined in market price to-day that more than half of the interest which has been paid

upon it has been lost by its fall in market value. Many who bought the three and three and a half per cent. bonds which seven years ago were accounted the best of long time investments, if they should sell them to-day would not realize enough, together with all the interest already received, to give them any net interest on their money; and in hardly any case would they have more than from one and a half to two per cent. The decline in market price twice the purchase amounts to a great part or even the whole of the income received during the meanwhile.

This is the practical effect of the increase in the rate of interest which has begun as a reaction from the long decline of twenty-five years which had preceded it.

I am impelled to draw from these considerations a conclusion very different from that which was expressed by my friend Mr. Macaulay. It seems to me that the extreme depression in the rate of interest which was brought about prior to 1897, by the vast accumulation of cautious and timid capital, is now undergoing a reaction, of which we are not yet able to see the limits, and which, it is quite conceivable, may still go on for a longer time and to a greater extent that we can easily foresee. Until some evidence can be adduced that the normal productiveness of capital, of which the rate of interest is ultimately and necessarily a function, has itself materially declined, there is no reason whatever to believe in the permanent and secular diminution of the rate of interest. It will undergo fluctuations, but as long as capital in the hands of human industry and of human ingenuity can reproduce its kind, the rate at which it promises to increase will be the only limit beyond which enterprise and sanguine hope will be unwilling to pay for the use of it.

Prof. Pietro Bottini (Italy):—

Le taux de l'intérêt est une fonction essentiellement d'économie sociale et qu'il faut considérer au point de vue des lois que régissent cette science. Avant tout, celle de la demande et de l'offre. Si nous considérons un Etat isolé, nous trouvons que le taux d'intérêt commence toujours par être très élevé et qu'il va, diminuant, avec les progrès de l'Agriculture et de l'Industrie. Le capital qui se produit continuellement et qui cherche à se replacer, produit la diminution. Toutefois, une quantité de circonstances perturbatrices peuvent changer la direction du taux de l'intérêt en produisant des variations oscillantes. Si nous considérons tous les Etats du Monde, nous voyons qu'il y a toujours en même temps des Etates qui ont des taux d'intérêt très élevés et d'autres, qui les ont très réduits. Ce fait induit une quantité de capitalistes à employer leurs capitaux dans les Pays de taux élevé en contribuant ainsi à élever le taux même dans les Pays de taux ré-

The rate of interest is essentially a function of social economy and must be considered from the standpoint of the laws which govern that science. Above all, there is that of demand and supply. If we take into consideration an isolated state, we find that the rate of interest always begins by being very high, and that it diminishes with the progress of agriculture and industry. The capital which is continually produced and seeks reinvestment causes the diminution. Nevertheless, a number of disturbing circumstances may change the tendency of the rate of interest by producing fluctuations. If we consider the world at large, we notice that there are always at the same time states that have very high rates of interest and others in which they are considerably reduced. This fact induces many capitalists to invest their capital in countries having a high rate, thus contributing to an increase in rate even in the countries with a lower rate. If this sort of equalization

duit. Si cette espèce de nivellement pouvait se faire assez rapidement sans être empêché ni entravé par les lois des divers Pays, l'effet en serait plus grand et les causes perturbatrices perdraient d'intensité en gagnant de l'extension. Du reste, les emplois de capital, en général, se bornent à des périodes qui ne dépassent pas 50 ans au plus, et cette période est trop courte pour marquer un changement définitif dans le cours du taux d'intérêt. Par conséquent, la question plus importante, est de savoir employer le capital d'une façon productive, et non par un nombre d'années plus ou moins grand. Le capital ne produit rien sans être mis en action par le travail, et le prix qu'on paye aux capitalistes va diminuer le prix qu'on doit payer aux travailleurs. Comme dans l'époque moderne la dernière partie tend à s'élever, et comme la production positive du capital est toujours la même, il est évident qu'il faudra diminuer la première partie. Mais, si les capitalistes ne manquent pas d'employer leurs stocks d'une façon qui puisse aider l'esprit d'initiative et de développement industriel et commercial des différents Pays, on pourra limiter beaucoup le danger de la baisse de l'intérêt. Il sera toutefois, toujours prudent que les Sociétés d'Assurances tiennent une différence de Réserves entre le taux d'intérêt effectif de leurs emplois et le taux auquel elles calculent leurs réserves.

could be effected rapidly enough without being prevented or hampered by the laws of the various countries, its effect would be much greater and the disturbing causes would lose much in intensity by being extended over a wider field. Yet the investments of capital are generally confined to periods not exceeding fifty years at the most and that period is short for indicating a definite change in the movement of the rate of interest. Consequently, the more important question is to know how to invest a capital profitably, and not merely for a greater or less number of years. Capital is unproductive if not put into operation by labor, and the price that is paid to capitalists tends to diminish the price which must be paid to the laborer. As at the present time the latter shows a tendency to rise, and as the positive production of capital is always the same, it is evident that the former must be reduced. But if the capitalists do not fail to invest their funds in such a way as to promote the spirit of initiative and the industrial and commercial development of the different countries, the danger of a decline of the rate of interest can be limited considerably. It will, however, always be prudent for insurance companies to hold reserves for the difference between the actual rate of interest on their investments and the rate at which their reserves are computed.

Mr. David Carment (Australia) :—

The large loans which are likely to be required by some of the Australian colonies in the near future are for the most part intended to repay old loans which are maturing and which are at present subject to higher rates of interest than will obtain in the future.

On the other hand in Australia, within the present year, rates are somewhat tending upward, on a certain class of loans. The rate on good mortgages is about four per cent.

Mr. Van Cise in the course of the discussion referred to the fact that there are a large number of installment policies and contracts of that sort for the beneficiaries of which the life companies will be trustees. I regard this fact as a possible source of danger in the future. The companies may thereby be hampered, and although in Australia we have some plans of that sort, we are not in the habit of pressing them upon the public, for this very reason.

The rates for municipal loans in Australia have been low, and I have

known of a Sydney Suburban municipality borrowing at as low as 3¾ per cent. Now the City of Sydney is issuing four per cent. debentures at about par, and the Australia Gaslight Company is borrowing on somewhat similar terms. I think their four per cent. debentures may be issued at a premium.

Mr. Van Cise referred to the securities of American railways, on which the rate has been reduced from six or seven per cent. to about 3½ per cent., although the security is the same. English insurance companies have invested considerable amounts in the securities of American railways, and I do not think they would have done that if it was thought that the security offered was the same now as it was twenty or thirty years ago. Although nominally the same security, yet owing to the large amount of accumulated profits and wise management, these securities are considered as of a different character than when they were paying higher rates of interest. This does not account for the whole fall in the rate of interest, but I think it accounts for a part.

One lesson is to be learned from Mr. Burn's paper, namely, that it is possible to obtain only about three per cent. on the best stock exchange securities. From that fact, we are not to prepare for a further fall in the rate of interest, but to reconcile ourselves to the idea that the rate of interest in the future on high class securities will be low, and we are therefore to turn our attention to other securities and to seek elsewhere for the rate of interest which we need, and which we can no longer find in these high class securities. It may be quite possible to find a higher rate of interest and yet obtain ample security for our funds.

Mr. D. P. Fackler (United States):—

On this subject there are some points in connection with the decline in the rates of interest which ought to be considered.

Some years ago, at a convention of State Insurance Commissioners, where matters of this kind are often discussed, attention was called to the fact that the rate of interest earned by the smaller companies was generally considerably in excess of that earned by the very large companies, and I have before me a publication of The Spectator—an insurance journal—of the issue of May 14th of this year, showing the rates of interest earned during the last twenty years by all the companies in this country, and running down the list we find that the very largest companies have a rate of interest below the average; take the last five years, from 1898 to 1902, inclusive, the average rate earned is 4.66 per cent., by all the companies. Picking out three of the very largest, they earned 4.46 per cent., 4.50 per cent., 4.60 per cent., or quite appreciably under the average of all the companies. Running down the list alphabetically, I will just mention the earnings of a number of the smaller companies and you will see they are much above the average. One company earned over five per cent.; another 5.6 per cent., or one per cent. over the average of the other Companies, and considerably more than one per cent. more than the larger companies. Two other companies, always considered very conservative, earned 5.1 per cent each. Another company, of which I may make the same remark, earned 5.33 per cent. Another earned something over 5 per cent., and the next earned over 6.5 per cent., during that time —over six and a half per cent! Another earned over five per cent., and the last on the list also earned over five per cent.

We thus see that where companies are doing a very large business,

they earn a lower rate of interest, but the smaller companies seem to be able to give more attention to investments, and earn a higher rate.

This has been the uniform experience for many years back, and I think that it should be considered in connection with government legislation as to the rates of interest to be assumed in the calculation of reserves. For it seems clear that it would be unjust to require the smaller companies, which earn from one-half to one per cent. more than the larger companies, to hold reserves based on as low a rate of interest as may be required in the case of the very large companies.

Technical Subjects.

Papers.

Gemischte Capitalversicherung mit an einem bestimmten Termine erwachsendem unbedingten Anspruch auf Prämien-Rückgewähr, by Mr. Hoppe of Austria.

Sur l'emploi simultané de lois de survie distinctes, by Mr. Quiquet of France.

Notes on Actuarial Functions, by Mr. Elderton of Great Britain.

On the Development of Tables derived from an Abridged Expression for the Calculated Expectation of Future Life, by Mr. Meikle of Great Britain.

Theorie der Leibrenten mit Rückvergütung der Baareinlagen abzüglich der bereits bezogenen Renten, by Mr. Dizler of Germany.

On a Rational Method of Loading, by Mr. Peek of Holland.

Mr. Robert Henderson (United States) :—

In the paper of Mr. Elderton, I think it well to point out some expressions which may, it seems to me, be misunderstood, and which I think Mr. Elderton will himself wish to correct after the liability to misunderstanding is pointed out.

On the third page of this paper, on the subject of values, q, m, and μ, he gives the three formulas, one for q_x in the form of $\int_x^{x+1} \theta(x)\,dx$ divided by $\varphi(x)$; the second for m_x, in the form of the same integral as in the former case, divided by the integral of the same function as in the former case, and the third μ_x, the quotient of the two functions.

Now, it seems to me that these three are inconsistent with each other, if the function in the denominator is the same in all three cases. If the value of μ_x is derived correctly, then the others will not be exactly correct, except in one special case, where new entrants and withdrawals exactly balance one another, so that the function of x which represents the exposed is equivalent to l_x in the mortality table.

I also wish to advert to methods of graduation by Makeham's law which are suggested by Mr. Elderton. These are much in the line of a previous paper by Mr. Elderton himself and of the graduation by Prof. Glover of the American Experience table which was discussed at the last Actuarial Society meeting. Prof. Glover, as I showed in my discussion of his paper, starts with a function which may be expressed as $(x - 10)\ (88 - x)$.

Probably Mr. Elderton's method of estimation would come nearer to the ordinary distribution of the exposures in a mortality experience than would Prof. Glover's, but I still think that probably some algebraic function more closely representing the actual distribution would give a

result which would be more satisfactory in the long run, without materially increasing the labor of performing the graduation.

Mr. Meikle's paper exhibits a method which may be conveniently used in all special cases for the graduation of a table by operating upon the force of mortality, and in it he expresses the expectation of life in the form of a function of the second degree. I think it would be curious to determine what the law of the mortality table would be which would give such a law of expectation. By working from the complete expectation and remembering that $\mu_x = \frac{1+\frac{d\mathring{e}_x}{dx}}{\mathring{e}_x}$ we get after reduction $l = k\,(w-x)^{n-2}\,(\rho-x)^{-n}$

Mr. Albert Quiquet (France) :—

J'ai montré, il y a plusieurs années, que les lois de Gompertz et de Makeham peuvent être regardées comme un cas particulier de " fonctions de survie " qui jouissent de la propriété suivante: par leur emploi, la probabilité de survie d'un groupe de N individus au bout du temps t peut être exprimée seulement à l'aide de n variables, n étant plus petit que N.

J'avais seulement traité le cas où les N individus étaient soumis à la *même* loi de survie. Dans la présente étude, je me suis affranchi de cette restriction, et j'ai considéré le cas, plus général, où les N individus sont sujets à des lois distinctes de survie.

Applications.—L'emploi simultané de lois de survie distinctes n'est pas exceptionnel. J'en ai donné plusieurs exemples dans ma communication (Art. 7). Je puis, aujourd'hui, en ajouter un, qui m'est fourni par les Tables si soigneusement détaillées, dont nous devons le récent établissement à " l'Actuarial Society of America." Ces Tables envisagent 98 classes spéciales de risques. Si, un jour, on songe à ajuster algébriquement les plus intéressantes, il faudra trouver une série de nuances analytiques pour figurer d'aussi nombreuses variétés de la mortalité humaine. A un tel point de vue, de nouvelles généralisations des lois de Gompertz et de Makeham ne sont peut-être pas inutiles, et c'est dans cette intention que je me suis permis de les signaler à mes éminents confrères.

I have shown, several years ago, that the Gompertz and Makeham laws may be regarded as a particular case of " Survival Functions " possessing the following essential quality: by their application, the probability of survival of a group of N individuals to the end of time t can be expressed only with the aid of n variables, n being smaller than N.

I had then only treated the case in which the N individuals were subject to the *same* law of survival. In the present study I have disregarded that restriction and have considered the more general case, in which the N individuals are subject to distinct laws of survival.

Applications.—The simultaneous application of distinct laws of survival is not exceptional. I have given several examples of it in my communication (Art. 7). To-day I am able to add one, furnished to me by the tables so carefully detailed, for the recent introduction of which we are indebted to the " Actuarial Society of America." These tables consider 98 special classes of risks. If, some time or other, it should be intended to arrange algebraically the most interesting among them, it will be necessary to discover a series of analytical shades of distinction to represent by figures so many varieties of human mortality. From such a point of view, new generalizations of the Gompertz and Makeham laws are perhaps not unprofitable, and it is for that purpose that I have taken the liberty to point them out to my eminent fellow-members.

Subject, *Insurance of Impaired Lives.*
Paper.
Die verschiedenen Systeme der Versicherung von geschwächten Leben in Deutschland, by Mr. Gunckel of Germany.

MR. ARTHUR GUNCKEL (Germany):—

Zu dem Ihnen vorliegenden Elaborat ueber die verschiedenen Systeme der Versicherung geschwaechter Leben muss ich bemerken, dass mir nachtraeglich noch eine Notiz hinsichtlich der Geschichte dieser Versicherung geschwaechter Leben aufgestossen ist, die ich zur Ergaenzung der vorliegenden Arbeit Ihnen mitteilen zu muessen glaube. Die Preussische Lebensversicherungs-Aktiengesellschaft zu Berlin hat naemlich bereits im Jahre 1892 dem Verein deutscher Lebensversicherungsgesellschaften einen Plan in Gestalt eines gemeinsamen Rueckversicherungsvertrages zur Beratung vorgelegt, um eine Versicherung geschwaechter Leben zu ermoeglichen, wonach sie vorschlug, dass man als Praemie dafuer (um den Begriff der Praemie der Versicherung der geschwaechten Leben zu begrenzen) alle diejenigen Versicherungen einbringen sollte, welche die normale Praemie um so viel ueberschreiten als der anderthalbfache Betrag der Jahresrisikopraemie ausmachen wuerde. Es wurde damals schon richtig anerkannt, dass es schwer sei, eine allgemeine Graenze zu ziehen dafuer, wo der Begriff des normalen Risikos aufhoere und wo der Begriff des geschwaechten Lebens anfange.

Die Ihnen vorliegende Arbeit von 34 nordamerikanischen Gesellschaften mit deren 98 Risikoklassen, ueber welche bereits gestern Nachmittag verhandelt worden ist, hat in gewissem Sinne bereits eine solche Trennung vollzogen: wenn Sie die ersten 42 Risiken dieser Arbeit als die normalen Risiken ansehen, und die letzten Klassen von 77 bis 98 (die nur durch Aufenthalt in gesundheitsgefaehrlichen Landstrichen gefaehrdet sind), ausser acht lassen, so bleiben die Risikenklassen 43 bis 76, die als geschwaechte Leben anzusprechen sind. So wird es also moeglich sein, eine Abtrennung, ein Herausscheiden

As to the paper on the various systems of the insurance of impaired lives (in Germany), I must remark that I have come across an additional memorandum concerning the history of that insurance with which, I think, I must acquaint you in order to supplement the paper before you. The Prussian Life Insurance Stock Company, as early as 1892, submitted to the Society of German Life Insurance Companies for consideration in order to make the insurance of impaired lives possible, a project in the shape of a reinsurance contract, in which they proposed that as a premium (so as to limit the idea of a premium on the insurance of impaired lives) all those insurances should be included in one class, the premium for which exceeds the normal premium by an amount equivalent to one and a half times the annual risk premium. Even at that time it was acknowledged that it was difficult to draw a general line which was to determine where the idea of the normal risk ends and that of the impaired life begins.

The work before you, embodying the results of thirty North American companies on ninety-eight classes of risks, which has been already discussed, has, in a sense, brought about such a division. If you regard the first forty risks of this work as the normal risks, and disregard the later classes from 77 to 98 (which are impaired only by reason of residence in unhealthy districts), there remain the classes of risks from 43 to 76 to be considered as impaired lives. Thus, with care, it will be possible to bring about an elimination of the non-normal risks.

I revert to the proposition of the Prussian Life Insurance Stock Company. It found no favor with the Society of German Life Insurance Companies, mainly owing to the difficulty of finding the requisite companies in-

der nicht normalen Risiken, wenn man sich Muehe gibt, herbeizufuehren.

Ich komme auf den Vorschlag der Preussischen Lebensversicherungs-Aktiengesellschaft zurueck. Er fand bei dem Verein deutscher Lebensversicherungsgesellschaften keine Geneigtheit; und zwar in der Hauptsache wegen der Schwierigkeit, die erforderlichen Gesellschaften zu finden, welche das Element der geschwaechten Leben in ihre Risiken einzuschliessen geneigt waren; —dann aber auch, weil man eben die Schwierigkeit erkannte, dauernd und ohne besondere Strafbestimmung fuer die Uebertretung oder Abweichung von solchen Vertragsvorschriften das Risiko so praecisieren zu koennen, wie es die ausgesonderte Versicherung geschwächter Leben erfordert.

Ich bin in meiner Arbeit zu dem Ergebnis gekommen, dass die Summe dessen, was in Deutschland bisher erreicht worden ist, nur bescheiden ist. Sie sehen auf Seite 145, dass die vier beobachtenden Lebensversicherungsgesellschaften 22½ Mille Versicherungssumme in elf Jahren erreicht haben;— einen allerdings nur kleinen Betrag, der aber beiweitem nicht alles umfasst, was in Deutschland bezueglich der Versicherung geschwaechter Leben geschehen ist. Wenn Sie beachten, dass eine grosse Menge grosser Gesellschaften in dem Moment, wo sich diese vier Gesellschaften dazu hergaben, geschwaechte Leben zu versichern, sofort die Grenzen der normalen Risiken erweitert hat,— wenn Sie ferner bedenken, dass den vier oder fuenf Gegenseitigkeitsgesellschaften sehr bedeutende Aktiengesellschaften gegenueberstehen, welche Wert darauf legen, in ihrer Jahresfoerderung tunlichst voranzuschreiten und sich den Rang abzulaufen, so werden Sie zugeben muessen, dass der durch die vier Gesellschaften gegebene Anstoss zu einem doch beachtenswerten Erfolge gefuehrt hat.

Ob in Deutschland oder in anderen Reichen ueberhaupt ein Beduerfnis vorliegt zur Versicherung geschwaechter Leben, moechte ich verneinen. Denn ich glaube, dass die Grenze fuer das, was ueberhaupt noch normal versichert werclined to include the element of impaired lives in their risks, but also because the difficulty was realized of accurately defining the permanent risk and without a special penalty for the transgression of or deviation from such contract-regulations as are required in the separate insurance of impaired lives.

In my investigation I have arrived at the conclusion that the sum total of what we have hitherto accomplished in Germany is very modest. You notice on page 145 that the four life insurance companies under observation have obtained 22,500 of insurance in eleven years; only a small amount, to be sure, but which does not comprise all that has been done in Germany respecting impaired lives. If you take into consideration that a great number of large companies, at the time when the four companies engaged in insuring impaired lives, immediately extended the limits of their normal risks,—if further you keep in mind, that against the four or five mutual insurance companies are pitted very important stock companies which are ambitious to advance as rapidly as possible, you will have to admit that the impulse given by the four companies has led to a result deserving, at least, of notice.

The question whether in Germany or in other countries there is any need at all for the insurance of impaired lives, I would answer in the negative. For I believe that it is difficult to set the limit for whatever may still be insured on normal terms. If that limit is extended very far there is no longer sufficient advantage for the insurance of impaired lives as such, because their insurance is obtained on more stringent terms. Insurances have been accepted at an annual premium as high as 12½ per cent., in order to grant insurance on the most hazardous risk.

In proceeding to the final table, I observe that the four companies have, after all, obtained good results with 22,662 persons of a minimum mortality in the eleven years of insurance. This result may be traced to the fact that the companies have exercised caution in accepting such insurances.

den kann, schwer gezogen werden kann. Ist diese Grenze sehr weit gesteckt, dann gibt es fuer geschwaechte Leben kein ausreichendes Aliment mehr, weil auch zu schweren Bedingungen versichert wird. Es sind Versicherungen bis zu 12½ % Jahrespraemie angenommen worden, um auch dem schlimmsten Risiko Versicherung zu gewaehren.

Wenn ich zur Schlusstabelle uebergehe, so bemerke ich, dass die vier Gesellschaften in den elf Versicherungsjahren mit 22,662 Personen Mindersterblichkeit immer noch einen guten Erfolg erzielt haben. Der Erfolg wird darauf zurueckzufuehren sein, dass die Gesellschaften bei Annahme derartiger Versicherungen vorsichtig vorgegangen sind.

Was nun die Erwartung fuer die Zukunft angeht, so moechte ich sagen, dass ich nicht glaube, dass noch viele weitere Gesellschaften separate Einrichtungen fuer die geschwaechten Risiken treffen werden. Es wuerde hinreichen, wenn wir fuer die Statistik der geschwaechten Leben das erreichen koennten, dass sich die Versicherungsgesellschaften dahin verstaendigen, ueber geschwaechte Leben etwa nach dem Vorbild der 34 amerikanischen Gesellschaften in deren Risikoklassen 43 bis 76 besondere Zaehlkarten zur Beobachtung des Sterblichkeitsverlaufes einzufuehren, die bei gemeinsamer Bearbeitung dazu fuehren moechten, den Messer dafuer zu geben, in wie weit die Sterblichkeit der schwachen Leben die normale uebersteigt.

As regards the outlook for the future, I would say that I do not believe that many other companies will make separate arrangements for impaired risks. It would suffice if, in regard to the statistics of impaired lives, we succeed in inducing the insurance companies to come to an agreement as to introducing into their classes of risks, of classes 43 to 76 as exemplified by the 34 American companies, special cards for the observation of the rate of mortality in such classes, which cards would, when analyzed conjointly, eventually furnish a scale by which the excess of the mortality of impaired lives over the normal could be estimated.

Mr. Sven Palme (Sweden):—

J'ai eu l'honneur de présenter, au dernier Congrès international des médecins de Compagnies d'assurances à Amsterdam, une communication sur les travaux d'un Comité scandinave, nommé pour étudier la question importante des risques tarés.

Ce Comité, dont j'ai l'honneur d'être le président, et qui était élu par les représentants de 17 Compagnies scandinaves, était composé de 4 directeurs, chacun représentant un des quatre pays

I had the honor to lay before the last international Congress of the Medical Experts of Insurance Companies at Amsterdam, a report on the work of a Scandinavian committee appointed to study the important question of impaired risks.

That committee, of which I have the honor to be president, and which was elected by the representatives of seventeen Scandinavian Companies, was composed of four directors, each rep-

scandinaves, de 2 mathématiciens actuaires et de 2 médecins.

Quand il s'agit d'étudier, au point de vue de l'assurance sur la vie, les risques tarés, on peut choisir entre deux voies différentes. On pourrait dire que l'une d'entre elles a comme directrice principale la science médicale, tandis que l'autre se base principalement sur les sciences mathématiques. Toutes les deux ont pourtant maintes relations intimes entre elles. La première voie est celle que M. le Dr. Poëls a si brillamment exposée dans ses remarquables rapports aux deux Congrès des médecins. Il analyse d'une manière admirable certaines maladies ou dispositions maladives, et il les étudie sous tous les rapports. Il examine la symptomatologie et l'étiologie, ainsi que le problème délicat du pronostic. Il tire ensuite des conclusions précises sur l'admissibilité et le traitement de ces risques. La méthode employée par M. Poëls est admirable. Elle est très sûre et peut s'appliquer à toutes les formes différentes des risques tarés, mais elle est aussi très difficile et laborieuse, et elle exige une vaste érudition et beaucoup d'expérience et d'intelligence.

Dans notre comité, nous avons suivi l'autre voie. Nous avons établi une enquête, aussi minutieuse que possible, concernant la mortalité des personnes, ayant demandé des assurances sur la vie aux 17 Compagnies scandinaves, mais dont les propositions ont été refusées avant l'année 1893. Cette enquête, impossible sans doute dans un pays très grand, a réussi très bien chez nous, et nous sommes arrivés à des résultats qui dépassent vraiment nos espérances.

Le dossier que nous avons eu à étudier comprenait en tout 10231 refusés, mais, 2023 parmi eux n'étant pas encore retrouvés ou pas tout à fait vérifiés, il ne nous restait à observer qu'environ 82 pour 100 de tous les refusés. Parmi les 2023 que nous n'avons pas pu compter dans notre statistique, il y avait:

1313 complètement introuvables, 181 morts, mais sans autres indications que

resenting one of the four Scandinavian countries, two actuaries and two physicians.

When the study of impaired risks from the standpoint of life insurance is in question, two different methods may be chosen. One of them may be said to have for its principal guide medical science, while the other is based chiefly on actuarial science. There are many intimate relations between them. The first method is that presented so brilliantly by Dr. Poëls in his remarkable reports to the two Congresses of Medical Experts. He admirably analyses certain diseases or constitutional tendencies to disease, and studies them in every respect. He inquires into the symptomatology and etiology as well as into the delicate problem of prognosis. He then draws definite conclusions as to the admissibility and the treatment of those risks. The method employed by Dr. Poëls is admirable. It is certain and may be applied to all the various forms of impaired risks, but it is also extremely difficult and laborious, and requires great skill besides much experience and intelligence.

In our committee we have followed the other method. We set on foot an inquiry as minute as possible, concerning the mortality of the persons who had applied for life insurance to the seventeen Scandinavian companies, but whose applications had been declined before 1893. That inquiry, undoubtedly impossible in a very large country, has succeeded very well with us, and we have arrived at results really beyond our expectations.

The data we had to examine comprised in all 10,231 declined persons, but 2,023 of them not having been again found, or wholly verified, there remained only about 82 per cent. of all those declined. Among the 2,023 whom we could not include in our statistics, there were 1,313 absolutely undiscoverable; 181 dead, but without any other indications than "died in America," or "died several years ago," etc.; 529 traced and probably still alive, but without further information.

" morts en Amérique," ou " morts il y a plusieurs années," etc.

529 dépistés et probablement encore en vie, mais sans autres renseignements.

Parmi les 8208 individus sur lesquels nous avons réuni des données exactes, 2186 ou 26.6 pour 100 étaient morts; ce taux moyen de mortalité n'offrait rien d'étonnant, vu que les demandes d'assurances de tous ces individus avaient été refusées.

Le temps d'observation de ces refusés, qui joue naturellement un rôle important, ne s'étend en moyenne que de 12 à 6 ans, et pour les décédés seulement de 10 à 3 ans. Nous avons trouvé pourtant des chiffres dignes d'être utilisés comme base d'une étude sérieuse.

La mortalité parmi les refusés a été soumise aux études mathématiques, et on a comparé la mortalité des différents groupes d'âges des refusés avec celle des 17 Compagnies anglaises, qui est la table encore employée par la plupart des Compagnies suédoises. On a trouvé ainsi:

Groupes D'Ages	La Mortalité des Refusés Exprimée en pour Cent de la Mortalité des 17 Compagnies Anglaises
20–30	144,5 p. 100
30–40	155,6 —
40–50	155,4 —
50–60	150,6 —
60–70	123,1 —
70–80	102,9 —
80–90	114,3 —

La mortalité des refusés atteint son maximum aux âges 30-50, où elle monte à environ 55 pour 100.

Les autres risques tarés, ceux qui ont été acceptés par les Compagnies d'assurances avec augmentation d'âge, limitation de la durée de l'assurance ou d'autres modifications, ont été l'objet d'études spéciales.

En même temps que notre comité, un autre comité scandinave travaille pour l'établissement de tables de mortalité communes, basées sur l'expérience de 19

Among the 8,208 individuals as to whom we have exact data, 2,186 or 26.6 per cent. were dead; this rate of mortality was not surprising, inasmuch as the applications for insurance of all these individuals had been declined.

The period of observation of these declined persons, which, of course, plays an important part, covers on the average not more than from 12 to 6 years and, as regards the deceased, only from 10 to 3 years. Nevertheless, we have arrived at figures worthy of use as a basis for serious investigation.

The mortality among the declined was made the object of mathematical investigation and the mortality among the different age-groups was compared with that of the seventeen English companies, which is the table still in use with the majority of the Swedish companies. The result was as follows:

Age-Groups.	Mortality of the Declined Risks Expressed in the Percentage of Mortality of the Seventeen English Companies.
20–30	144.5 per cent.
30–40	155.6 " "
40–50	155.4 " "
50–60	150.6 " "
60–70	123.1 " "
70–80	102.9 " "
80–90	114.3 " "

The mortality reaches its maximum at the ages from 30 to 50, when it amounts to about 55 per cent.

The other impaired risks, those that were accepted by the insurance companies with an increase in age, limitation of the period of insurance and other modifications, were made the object of special investigation.

Simultaneously with our committee, another Scandinavian committee is at work to fix the normal mortality-tables, based upon the experience of

Compagnies scandinaves. Cet autre comité a mis toute sa statistique à notre disposition. Donc, nous avons pu disposer d'une statistique de 18,132 individus dont les demandes d'assurance ont été acceptées à la faveur d'une modification quelconque.

Parmi ces 18,132 cas, on a pu compter 2638 morts, soit 14.5 pour 100. Le temps d'observation des décédés a varié de 12 à 1 an.

Si l'on compare la mortalité parmi ce groupe d'assurés avec celle des 17 Compagnies anglaises, on trouve le pourcentage suivant:

nineteen Scandinavian companies. That committee placed all its statistics at our disposal. Consequently we have been able to avail ourselves of the statistics of 18,132 individuals whose applications for insurance were accepted under some modification. Among these 18,132 cases could be counted 2,638 dead, say 14.5 per cent. The period of observation of the deceased varied from 12 years to 1 year.

In comparing the mortality among this group of insured persons with that of the seventeen English companies, we find the following percentage:

Groupes D'Ages.	La Mortalité Parmi les Assurés qui ont été acceptés contre une Modification quelconque, Rapportée à la Mortalité des 17 Compagnies anglaises
20–30	96,6 p. 100
30–40	89,4 —
40–50	107,3 —
50–60	120,0 —
60–70	112,1 —
70–80	102,0 —
80–90	83,9 —

Comme on le voit, la mortalité de 20 à 40 ans *est au-dessous de la mortalité des* 17 *Compagnies anglaises.*

Ce fait paraît d'abord un peu étonnant, mais il est très facile à expliquer. C'est que la table de mortalité des 17 compagnies anglaises ne correspond pas à la longévité actuelle des peuples scandinaves. Elle donne des taux de mortalité trop élèves, surtout pour les âges inférieurs. On peut pourtant constater, dans les âges moyens, une mortalité atteignant son maximum d'environ 20 pour 100 de 50 à 60.

Les recherches qui ont été exposées plus haut démontrent clairement que des lois de mortalité tout à fait particulières sont en vigueur pour ce qui regarde les risques tarés, n'importe de quelle espèce.

Cela prouve aussi jusqu'à l'évidence la plus complète qu'il est absolument incorrect de vouloir appliquer aux risques tarés le lois de mortalité qui s'appliquent aux risques normaux. L'espoir de pouvoir contrebalancer, par

As may be seen, the mortality from 20 to 40 years is below that of the seventeen English companies. This fact seems at first a little surprising, but it is very easily explained. The reason is that the mortality-table of the seventeen English companies does not correspond to the present longevity of the Scandinavian people. It gives too high a rate of mortality, especially for the younger ages. In the middle ages may, however, be ascertained an excess mortality reaching the maximum of about 20 per cent. from 50 to 60 years of age.

The investigations above set forth demonstrate plainly that peculiar laws are in force with regard to impaired risks, no matter of what kind. This also proves most conclusively that it is absolutely incorrect to try to apply to impaired risks the mortality rates, relevant to normal risks. The hope of being able to counterbalance, by a rating up more or less arbitrary, though more or less sanctioned by custom, the

une augmentation d'âge plus ou moins arbitraire, plus ou moins autorisée par la coutume, les différentes tares des risques est complètement faux. Les méthodes destinées à compenser ainsi une *surmortalité*, dont on ne sait rien ou presque rien, sont inapplicables.

Le procédé le plus précis serait sans doute d'imposer aux risques tarés les primes qui résultent directement d'une expérience de mortalité, basée sur une recherche statistique concernant des risques semblables ou analogues aux risques dont il est question. Les conséquences de ce raisonnement seraient pourtant d'exiger des tables de mortalité spéciales pour chaque différente maladie ou disposition maladive. Il serait sans doute suffisant d'établir un petit nombre de tables aussi caractéristiques que possible pour quelques grandes classes de risques tarés.

On pourrait objecter qu'on n'agit pas d'une manière équitable pour les assurés, si l'on réunit dans une même classe de risque des vies hypothéquées de différents degrés et de différentes espèces. L'équité complète est pourtant impossible. Et du reste, on peut demander qu'est-ce qu'on fait en réunissant dans une même classe, tous les risques que l'on accepte comme primes normales, sinon de commettre une injustice? Tous ces risques sont bien inégaux en fait de santé, en fait de pronostic. Quelques-uns sont pour ainsi dire *hypernormaux* d'autres se trouvent près de la limite de l'admissibilité contre primes normales. Tous sont pourtant réunis dans une même classe de risques.

Cette manière de voir a dicté les résolutions du Comité scandinave.

Le Comité, qui a trouvé nécessaire de réduire, autant que possible, le nombre des classes de risques, a hésité entre deux ou trois classes. Si l'on s'est décidé pour deux, c'est que la cause en est d'abord le désir de simplifier le système, autant que possible, mais, avant tout, le fait que les recherches statistiques du Comité groupent déjà les risques tarés en deux classes:

1° Les refusés;

various impairments of risks, is altogether erroneous. The methods designed to allow in this way for an *excess mortality* unknown or almost unknown to us, are not applicable.

The most adequate procedure would undoubtedly be to charge for the impaired risks the premiums which are the direct result of the experienced mortality, based upon a statistical research regarding risks similar or analogous to the risks in question. It follows from this argument, however, that special mortality-tables would be required for each different disease or tendency to disease. It would, no doubt, be sufficient to make up a small number of tables as characteristic as possible for a few large classes of impaired risks.

It might be objected that the insured are not treated equitably, if questionable lives of various degrees and various kinds are included in the same class of risks. Complete equity is, however, impossible. Yet, the question may be asked, what else is done by including in the same class all the risks accepted at normal premiums if not an injustice? All these risks are quite unequal, in point of health, in point of prognosis. Some of them are, so to speak, *hypernormal*; others are near the limit of admissibility at normal rates. All are nevertheless included in one and the same class of risks.

This view has prompted the resolutions of the Scandinavian Committee.

The Committee, finding it necessary to reduce as much as possible the number of classes of risks, hesitated between two or three classes. The reason for deciding upon two was, in the first place, the desire to simplify the system as much as possible, but above all the fact that the statistical researches of the Committee already group the impaired risks in two classes:

1. The declined.

2. Those whose applications for insurance were accepted under some modification.

On examination of the tables presented above, it is seen that the excess-

2.º Ceux dont les demandes d'assurances ont été acceptées contre une modification quelconque.

Si l'on examine les tableaux de chiffres, reproduits plus haut, on voit que la surmortalité s'élève au maximum pour les refusés à 55 pour 100, mais pour les autres à 20 pour 100.

Le Comité a trouvé bon, pour arriver à une mortalité correspondant à la mortalité des deux groupes principaux des risques tarés, d'augmenter les taux de mortalité des 17 Compagnies anglaises par exemple: 20 pour 100 et 50 pour 100. Le Comité a trouvé que l'on devait arriver, par cette opération, à de tables de mortalité tout à fait suffisantes pour ces deux groupes de risques.

Le maximum de la mortalité des refusés s'élève jusqu'à 55 pour 100, mais le Comité a fixé son maximum à 50 pour 100, vu qu'en tout cas un grand nombre des demandes devront dorénavant être refusées.

Ces tables de mortalité prêtes, il fallait calculer les primes d'assurance. Pour ce but, on s'est servi des mêmes méthodes que pour les primes ordinaires et des mêmes chargements de la prime pure. On a établi de cette manière deux séries de tarifs, chacun contenant les mêmes combinaisons d'assurance que les tarifs ordinaires des Compagnies, l'une correspondant à une *augmentation de prime modérée* (la mortalité augmentée de 20 pour 100); l'autre correspondant à une *augmentation de prime élevée* (la mortalité augmentée de 50 pour 100).

Le tableau suivant donne quelques exemples des primes des différentes combinaisons d'assurance. On y compare les primes ordinaires des Compagnies suédoises avec les primes de deux classes de risques, proposées par le Comité. Les primes sont calculées pour une somme d'assurance de 1000 francs.

Le Comité a pourtant trouvé que les deux classes proposées ne peuvent pas renfermer toutes les espèces de risques tarés. Il y a ajouté ceux qui ont été appelés *risques hasardeux décroissants*, ceux dont le danger diminue avec le

mortality reaches a maximum of 55 per cent. for the declined and of 20 per cent. for the others.

The Committee thought fit, in order to obtain a mortality corresponding to the mortality of the two principal groups of impaired risks, to raise the mortality-rates of the seventeen English companies, for instance, 20 per cent. and 50 per cent. The Committee found that by this operation mortality-tables may be obtained entirely sufficient for these two groups of risks.

The maximum of mortality among the declined reaches 55 per cent., but the Committee has fixed its maximum at 50 per cent., considering that at all events a large number of applications will henceforth have to be declined.

These mortality-tables ready, the insurance premiums had to be calculated. For this purpose the same methods were adopted as for the normal premiums with the same loadings of the net premium. In this way two series of rates were put in force, each for the same plans of insurance as the ordinary rates of the companies, one series corresponding to a *moderate increase of premium* (mortality increased by 20 per cent.), the other corresponding to a *high increase of premium* (mortality increased by 50 per cent.).

The following table gives a few examples of the premiums on various insurance plans. The normal premiums of the Swedish companies are there compared with the premiums for the two classes of risks, as proposed by the Committee. The premiums are calculated for an insurance of 1,000 francs.

The Committee found, however, that the two classes proposed cannot include all kinds of impaired risks. It has added those which have been called *risks with a diminishing hazard* that is, those where the danger grows less in course of time, for instance, when the family antecedents are in question, the unfavorable consequences of which diminish with the age of the insured, or when there is a question as to previous diseases which, for a certain number of years, are predisposed to

Combinaisons D'Assurance.	Age de L'Assuré.								
	25 Ans.			35 Ans.			45 Ans.		
	Primes Ordinaires.	Primes Avec Augmentation. Modérée.	Primes Avec Augmentation. Elevée.	Primes Ordinaires.	Primes Avec Augmentation. Modérée.	Primes Avec Augmentation. Elevée.	Primes Ordinaires.	Primes Avec Augmentation. Modérée.	Primes Avec Augmentation. Elevée.
Assurance aux primes uniques.	314.60	341.93	378.10	384.80	413.54	450.70	481.80	512.03	550.36
Assurance aux primes de la vie entière	18.70	20.78	23.79	24.40	27.02	30.78	34.30	38.02	43.35
Assurance aux primes de 20 ans	26.60	29.02	32.38	32.50	35.21	39.02	41.80	45.30	50.22
Assurance mixte 55 ans	28.60	30.01	32.08	45.70	47.14	49.35	98.90	100.53	102.92
Assurance mixte 60 ans.....	24.80	26.31	28.59	36.60	38.24	40.75	65.40	67.32	70.27
Assurance temporaire de 10 ans.	11.70	13.54	16.28	13.80	16.05	19.41	19.50	22.89	27.87

temps, par example, quand il s'agit des antécédents de famille, dont les conséquences défavorables diminuent avec l'accroissement de l'âge de l'assuré, ou quand il s'agit de maladie antérieures qui, pendant quelques années, prédisposent à des récidives.

On pourrait sans doute, pour contrebalancer ces tares, construire des primes décroissantes, mais il est assurément très difficile de juger la diminution des risques et d'y appliquer une prime. Le Comité a donc trouvé bon d'établir des primes qui sont fixes durant dix ans, mais qui cessent après ce délai.

Pour avoir une méthode simple et facile à appliquer, le Comité a proposé une surprime, proportionnée à la prime temporaire de dix ans de durée du prospectus ordinaire des Compagnies. Pour les deux classes de risques, qu'il a paru bon de garder aussi, le Comité a proposé des surprimes que s'élèvent à 20 pour 100 (*surprime modérée*) et à 50 pour 100 (*surprime élevée*) des primes temporaires. Le tableau suivant donne quelques exemples de ces

recur. To counterbalance such impairments, one might undoubtedly institute diminishing premiums, but it is surely very difficult to estimate the diminution of the risk and to apply a premium for it. The Committee deemed it therefore expedient to establish premiums which are fixed for ten years, but cease after that period.

In order to have a simple and easily applicable method, the Committee proposed an extra premium in proportion to the temporary premium for ten years according to the companies' normal prospectus. For the two classes of risks, which it seemed expedient to retain also, the Committee proposed extra premiums amounting to 20 per cent. (*moderate extra premium*) and 50 per cent. (*high extra premium*) of the temporary premiums. The following table gives a few examples of these premiums, calculated for an insurance of 1,000 francs.

The propositions of the Committee were submitted to the General Assembly of Representatives of the Seventeen Scandinavian Companies, which

surprimes, calculées pour une somme d'assurance de 1000 francs:

met at Stockholm in the month of June of last year.

Age De L'Assuré.	Surprimes Modérées De Dix Ans.	Surprimes Elevées De Dix Ans.
25	2.34	5.85
35	2.76	6.90
45	3.90	9.75

Les propositions du Comité ont été présentées à l'Assemblée générale des représentants des 17 Compagnies scandinaves, qui s'est réunie à Stockholm au mois de juin de l'année passée.

Le Comité devait reconnaître que ses propositions, loin de prétendre donner une solution décisive du problème, n'avaient d'autre but qu'un essai sérieux. Tandis que le Comité devait continuer ses travaux, en poursuivant ses études sur la nature des risques tarés, les Compagnies, en adoptant les méthodes provisoires, projetées par le Comité, et en les pratiquant pendant un certain temps, pouvaient recueillir des expériences, sur lesquelles il serait possible de baser la solution ultérieure du problème.

L'Assemblée, à l'unanimité, a approuvé les propositions du Comité, et déjà un assez grand nombre des Compagnies suédoises se sont décidées à mettre en pratique, pendant trois ans, depuis le 1er janvier 1903, les méthodes proposées par le Comité.

Comme on le voit, il reste au Comité scandinave des risques tarés et aux Compagnies qui appliquent les nouvelles méthodes un travail assez sérieux.

Il s'agit, pour le Comité, d'étudier les diverses maladies et les dispositions aux maladies, de les comparer avec la statistique des décès, de classer les risques selon leur degré et leur nature, de voir si les catégories simples et peu nombreuses, qu'on a résolu d'établir à titre d'essai, sont actuellement suffisantes ou non.

Il s'agit pour les Compagnies d'assurances qui ont accepté, pour trois ans, les nouvelles méthodes, de formuler un

The Committee could not help admitting that its propositions, far from pretending to solve the problem definitely, had no other end in view than a serious trial. While the Committee had to continue its work in pursuing its investigations as to the nature of impaired risks, the companies, by adopting the temporary methods projected by the Committee, and by practising them for a certain period, could gather an experience on which it would be possible to base a further solution of the problem.

The Assembly unanimously approved of the Committee's propositions, and already quite a large number of Swedish companies have decided to put the methods proposed by the Committee into practice during a period of three years, beginning on January 1, 1903.

As may be seen, there is yet sufficiently serious work in store for the Scandinavian Committee on impaired risks and for the companies who are applying the new methods. As for the Committee, the question is to study the various diseases and constitutional tendencies to diseases, to compare them with the mortality statistics, to classify the risks according to their degree and their nature and to see whether or not the few and simple categories which it was resolved to establish by way of trial, are at present sufficient. As for the insurance companies which have adopted the new methods for three years, the question is to formulate a rule, not only for the classification of impaired risks according to the principles quoted above, but also for the extension of the limits of insurance. As the further extensions

règlement, non seulement pour la classification des risques tarés selon les principes cités plus haut, mais aussi pour l'élargissement des limites de l'assurance. Comme les augmentations plus élevées du prospectus pour les risques tarés se basent sur des demandes d'assurance refusées, il est évident que certaines catégories de personnes qui, jusqu'à présent, ont été exclues du bénéfice des assurances, peuvent être admises contre ces primes élevées.

Le Comité continue donc ses travaux et rend, en même temps, selon la décision de l'Assemblée de l'été passé, le service d'une sorte de bureau de statistique.

L'Assemblée a confié au Comité plusieurs recherches spéciales d'un grand intérêt. Une recherche minutieuse sur la *syphilis* est déjà en train. Toutes les Compagnies scandinaves qui prennent part à ces travaux font étudier, par des médecins, toute la masse de leurs assurés.

Le Comité se prépare actuellement à entreprendre une recherche sur l'autre grand ennemi des Compagnies d'assurances, savoir la *tuberculose* et à étudier à l'aide de statistiques la question des *suicides*.

of the plans for impaired risks are based on declined applications for insurance, it is evident that certain categories of persons who, heretofore, were excluded from the benefit of insurance, can be admitted under these high premiums. The Committee therefore continues its labors and at the same time serves, according to the decision of the Assembly of last summer, as a sort of statistical bureau.

The Assembly entrusted the Committee with several special researches of great interest. A minute research concerning *syphilis* is already in progress. All the Scandinavian companies who participate in this work cause the entire number of their insured to be examined by physicians.

The Committee is now preparing to make an investigation with regard to the other great enemy of insurance companies, to wit: *tuberculosis* and to study, with the aid of statistics, the question of suicides.

DR. ALFRED MANES (Germany):—

Fuer die deutschen Herren moechte ich hier mitteilen, dass,—wie vielleicht schon bekannt ist,—von Dr. Tiselius in Stockholm ein Bericht ueber das von Herrn Sven Palme beruehrte Thema erschienen ist.

Ferner moechte ich mitteilen, dass die ganze Frage der Versicherung minderwertiger Leben auf dem dritten internationalen Kongress der Versicherungsaerzte in Paris, welcher vom 25. bis 28. Mai d. J. abgehalten worden ist, verhandelt wurde. Leider war kein einziger Herr aus Amerika auf diesem Kongress anwesend. Da aber der naechste Kongress in Berlin stattfinden wird,—und zwar in derselben Zeit, in welcher auch der fünfte internationale Kongress fuer Versicherungswissenschaft abgehalten werden wird,—so ist

For the benefit of the German delegates I want to state that, as perhaps you may already know, a report by Dr. Tiselius of Stockholm on the topic referred to by Mr. Sven Palme has been published.

Furthermore, I wish to inform you that the entire question of insurance of impaired lives was discussed at the Third International Congress of Insurance Medical Experts in Paris, which convened from the 25th to the 28th of May of this year. I regret to say that not a single delegate from America was present at that Congress. As, however, the next Congress will be held in Berlin at the same time as the Fifth International Congress of Actuaries will convene, an opportunity will perchance be offered for the participation

vielleicht Gelegenheit gegeben, dass recht viele amerikanische Doktoren an diesem naechsten internationalen Kongress der Versicherungsaerzte teilnehmen. Es ist auf dem Pariser Kongress ueber jede einzelne in Betracht kommende Krankheit referiert worden, und der sich daranschliessende Meinungsaustausch war ausserordentlich interessant. Die Berichte und die Verhandlungen werden demnaechst im Druck erscheinen und sind von dem Pariser Comité zu beziehen.

by many American physicians in this next Congress of Insurance Medical Experts. At the Paris Congress, every single disease coming under consideration was reported on and the ensuing interchange of ideas was extremely interesting. The reports and transactions will presently appear in print and may be obtained from the Paris Committee.

Mr. D. P. Fackler (United States):—

I have not heard all the discussion with regard to the insurance of sub-standard lives, and I hope I will not repeat anything that has been said by others. In the United States we have had something like thirty years' experience in that department of insurance, and I have had some acquaintance with the subject during that time in connection with companies both in Canada and the United States. I think it has been the general experience that it is more popular to insure lives of that character on the endowment plan, and for a term of twenty years generally, but making the term longer or shorter according to the case. Of course, you can give a final endowment for the full amount of insurance, and on the participating plan there is always the hope of considerable allotments of surplus. The premium charged is not higher than for a first class life, and the higher probable mortality is met by reducing the insurance during the earlier years. Every man seems to have enough of hope in his composition to believe that he is not going to die during the period in which the insurance is materially reduced below the normal amount. Exact actuarial calculation shows that by making certain reductions in the normal insurance during the first years, according to the particular case, and gradually diminishing these reductions during the remainder of life or the endowment period, we can almost exactly offset the impairment in the risk and yet charge no more than the usual rate for the normal amount of insurance. In this way, if a life is supposed to belong to a class having a rate of mortality about double that of standard lives, at the same age, the ordinary endowment premium will suffice if we make the risk begin with only one-half of the face of the policy, and then gradually increase until the end of the term.

In the case of endowments, the reserve increases so rapidly, that, as the risk on this plan thus increases, new accessions to the reserve practically offset the increase, and thus we charge practically the full premium for the sub-standard life and yet actually only the premium charged on standard lives. That is very much more popular than to charge a larger premium for the entire risk.

I said we have had about thirty years of experience with regard to impaired lives, but might have said nearly forty years, for in 1865 the Universal Life began business in New York City, making a specialty of insuring impaired lives. Mr. Homans was its consulting actuary and I assisted in the preparation of its premium tables, while I was still connected with Mr. Homans in the Mutual Life Insurance Company. The company had a very unfortunate mortality experience in its first few

years and then gave up this branch of business, devoting itself to the insurance of ordinary lives during the rest of its career, which ended in 1877. I believe that its unfortunate experience with sub-standard lives was entirely due to the lack of judgment on the part of its local medical examiners, particularly those in small towns, for I understood that its experience in large cities was not unfavorable, but it is of interest to remark that the company gave full insurance from the outset, even on lives that were thought liable to a death rate two or three times the normal. The unfortunate outcome of this experiment deterred further enterprise in this line for several years, until some companies in the United States and Canada were encouraged to try again on seeing the success attained by some of the English companies.

Mr. Robert G. Hann (United States):—

On the subject of under-average lives, I would state our experience shows that the applicant prefers, as a rule, to have the age rated up rather than a lien placed on the policy. In some cases we can only issue the contract subject to a lien.

There is one point about endowments issued on under-average lives that should be emphasized, namely, the ordinary premiums both for short or long endowments apart from the requirement, for the investment feature of the premium provides only for a normal mortality, and therefore we, as far as possible, add a provision for the percentage of the extra mortality that is to be provided for, whatever may be the kind of policy that may be issued.

Subject, *Health Insurance.*

Papers.

Ueber die Herstellung von Invaliden-Sterbetafeln, by Mr. Eggenberger of Germany.

On the Question of Health Insurance from the Practical Point of View, including Tables, by Mr. Janse of Holland.

L'assurance contre la maladie en Belgique, by Mr. Duboisdenghien of Belgium.

Sickness Assurance by Friendly Societies in Great Britain, by Mr. Watson of Great Britain.

Health Insurance in the United States, by Mr. Messenger of the United States.

Mr. Max Gerecke (Germany):—

Nachdem auf dem dritten Kongress in Paris Herr Maluquer y Salvador den Vorschlag gemacht hatte, neue Grundlagen fuer die Frage der Invaliditaets-Sterblichkeitstafeln zu schaffen, hatten wir gehofft, auf diesem Kongress schon genuegendes Material nach dieser Richtung hin vorlegen zu koennen. Leider jedoch haben wir nicht mehr genuegende Zeit fuer diese umfangreiche Arbeit gefunden. Herr Dr. Eggenberger in Muenchen hat es aber unternommen, um wenigstens zu zei-

After Mr. Maluquer y Salvador, at the Third Congress in Paris, had proposed to create a new basis for the question of Invalid Mortality Tables, we hoped to be able to lay before this Congress sufficient material for that purpose. Unfortunately the time allotted to us for this comprehensive work proved insufficient. To show at least with how great an interest this question has, at all times, met in Germany, Dr. Eggenberger of Munich has undertaken to give a short and very

gen, welch' grosses Interesse dieser Frage in Deutschland von jeher entgegengebracht worden ist,—eine kurze und sehr zusammengedraengte, aber um so treffendere Darstellung der historischen Entwickelung dieser Untersuchung in Deutschland zu geben.

Wir sind eifrig mit der Sammlung von Material bezueglich dieses Gegenstandes beschaeftigt und wir hoffen, dass wir nach drei Jahren Ihnen, wenn auch keine vollstaendige und erschoepfende Bearbeitung,—so doch das zusammengestellte Material der Beobachtungen vorlegen zu koennen. Die Arbeit des Herrn Dr. Eggenberger wird allen nicht-deutschen Versicherungs-Aktuaren wertvoll sein, wenn sie unser deutsches Material studieren wollen.

concise but all the more pertinent exposition of the historical development of this inquiry in Germany.

We are busily engaged in collecting material concerning this subject and hope to submit to you, three years hence, if not a complete and exhaustive elaboration, at least the compiled material of our observations. The work of Dr. Eggenberger will prove valuable to all non-German actuaries, in case they wish to study our German material.

DR. EUCKEN-ADDENHAUSEN (Germany):—

Ich will die Angaben ueber die Krankenversicherung, die fuer Belgien, fuer England und fuer die Vereinigten Staaten von Amerika dem Kongresse vorliegen, ergaenzen durch einige Mitteilungen, welche sich auf die Krankenversicherung in Deutschland beziehen. Denn Deutschland hat inbezug auf die Krankenversicherung bereits vor zwanzig Jahren bahnbrechend gewirkt durch sein Gesetz ueber die Krankenversicherung der Arbeiter.

Die deutsche Gesetzgebung ruht auf dem Gedanken, dass die Krankenversicherung der weniger Bemittelten eine obligatorische sein muss. Die Gruende, weswegen wir gerade die Krankenversicherung neben anderen Versicherungszweigen zu einer obligatorischen gemacht haben, sind ausschliesslich sozialpolitischer Art. Ihre wirthschaftlichen Wirkungen aber sind folgende: Erstens ist die oeffentliche Gesundheitspflege durch die obligatorische Versicherung verbessert worden. Es ist bekannt, dass von den minder Bemittelten nur ein Bruchteil in Krankheitsfaellen zum Arzt und zum Apotheker ging; erst dadurch, dass jene zwangsweise gegen Krankheit versichert wurden und dadurch das Recht auf freie aerztliche Behandlung und auf freie

I wish to supplement the data as to insurance against sickness which as regards Belgium, England and the United States of America are now before the Congress, by some remarks referring to insurance against sickness in Germany. For Germany has done pioneer-work with regard to invalidity insurance as long as twenty years ago, through its law concerning the insurance of the laboring classes in case of sickness.

German legislation is based upon the idea that insurance against sickness among those in moderate circumstances must be obligatory. The reasons why, in distinction from other branches of insurance, we have made insurance against sickness obligatory, are exclusively of a social-political nature. Its economic effects are as follows: In the first place public sanitary regulations have been improved by obligatory insurance. It is known that of the less well-to-do only a fraction applied to a physician or apothecary in case of sickness; only by being forced to insure against sickness and thus acquiring the right to gratuitous medical treatment and medicine, a large portion of the population was induced to avail themselves at all of a physician's and

Arznei erhielten, erst dadurch ist ein grosser Teil der Bevoelkerung bewogen worden, in Krankheitsfaellen den Arzt und den Apotheker ueberhaupt in Anspruch zu nehmen. Die zweite Wirkung schliesst sich unmittelbar an den sozialpolitischen Zweck, dass man beabsichtigte, der allgemeinen Wohlfahrt zu dienen, an. Alle Sozialpolitik muss darin gipfeln, dass sie das Familienleben foerdert und festigt. Nun ist meistens das einzige Kapital, welches die Arbeiter besitzen, ihre Arbeitskraft. Wie ungeheuer wichtig ist es also, dass dieses ihr einziges Kapital in sicherer Weise geschuetzt wird! Denn geht dies Kapital verloren, so tritt notwendiger Weise fuer den Arbeiter und seine Familie leibliche Not ein; und wie leicht im Leben der Menschen auf leibliche Not der sittliche Zerfall folgt, bedarf keines Beweises. Deshalb kann man mit Recht sagen, es sind auch ethische Wirkungen, welche die obligatorische Krankenversicherung der Unbemittelten zeitigt.

Eine weitgehende—freilich nicht unbedingt eine obligatorische—Krankenversicherung wirkt auch günstig auf die Erhaltung der Wehrhaftigkeit der Bevoelkerung ein. Ein Volk, das seine Gesundheit vernachlaessigt, wird mit der Zeit wehrlos. Wehrlos aber macht leicht ehrlos. In dieser Hinsicht will ich besonders erwaehnen einmal den Umstand, dass die Geschlechtskranken zwangsweise in ein Krankenhaus gebracht werden koennen, und zweitens dass versicherte Woechnerinnen eine Unterstuetzung erhalten, gleichgiltig ob mit dem Wochenbett eine Krankheit verbunden war oder nicht; das Wochenbett als solches berechtigt zu einer Unterstuetzung.

Nun ist in den zwanzig Jahren der Entwickelung der obligatorischen Krankenversicherung bei uns viel an der Verbesserung derselben gearbeitet worden. Das urspruengliche Gesetz hatte in grossen Zuegen die obligatorische Krankenversicherung geschaffen; dazu sind bislang im ganzen drei Abaenderungsgesetze erlassen worden. Insbesondere hat man dafuer Sorge

apothecary's services in case of sickness. The other effect is immediately connected with the intended social-political end to conserve the general welfare. Social politics must culminate in promoting and cementing family life. In most cases the only capital at the disposal of workmen is their working power. How extremely important is it, therefore, that this, their only capital, should be securely protected! For if this capital is lost, physical want necessarily results for the workman and his family, and how easily physical want is followed by moral deterioration needs no proof. Therefore it may justly be said that moral effects also are produced by the obligatory invalidity-insurance of the impecunious.

An extensive—although not necessarily obligatory—insurance against sickness has also a favorable effect upon the preservation of the defensive power of the population. A nation which neglects its health becomes in time defenceless. Loss of defence, however, easily leads to loss of honor. In this connection I want to mention particularly, first that those infected with a sexual disease may be forced to be taken to a hospital, and second, that insured women in childbed receive an allowance, no matter whether sickness was connected with the confinement or not; the confinement in itself constitutes a claim to support.

In the twenty years of the development in our country of obligatory insurance against sickness, much has been done towards its improvement. The original law had created obligatory invalidity insurance in general outlines; in addition three amendatory laws have up to this time been promulgated. Especial care was taken that a wide scope should be given to the benefits of invalidity-insurance. In this respect, and as regards the duration of the benefit, we shall enter in Germany upon a new stage, in 1904. This matter I shall resume and discuss more in detail to-morrow in connection with the subject, "Development of the Workmen's Insurance." To-day, how-

getragen, dass weite Kreise der Wohltaten der Krankenversicherung teilhaftig werden. Nach dieser Richtung und inbezug auf die Unterstuetzungsdauer werden wir in Deutschland im Jahre 1904 in ein ganz neues Stadium der Krankenversicherung eintreten. Darauf werde ich morgen bei dem dann auf der Tagesordnung stehenden Thema: "Entwickelung der Arbeiterversicherung" zurueckkommen und naeher eingehen. Heute aber will ich noch die Ergebnisse der Statistik mitteilen, die den Effekt dartun, den wir mit unserer obligatorischen Krankenversicherungs-Gesetzgebung in Deutschland erzielt haben. Nach den neuesten Mitteilungen des Kaiserlichen Statistischen Amtes haben wir zum Zweck der obligatorischen Krankenversicherung ueber 23,000 Kassen. In diesen Kassen sind versichert rund 10 Millionen Menschen,—sodass also jeder sechste Bewohner Deutschlands gegen Krankheit versichert ist.

An Bedeutung unter den Krankenkassen stehen voran die Ortskrankenkassen, das sind diejenigen Kassen, welche die Regel bilden sollen. Diese haben vier und eine halbe Million Mitglieder. Dann haben grössere Fabrikbesitzer das Recht, eine Fabrikkrankenkasse zu bilden, und diesen Fabrikkrankenkassen gehoeren gegen zwei und eine halbe Million Versicherte an. Daneben gibt es noch andere Kassenorganisationen zu dem gleichen Zwecke. Schliesslich erwaehne ich die sogenannten "freien Hilfskassen," welche unabhaengig von den Zwangsorganisationen stehen und hauptsaechlich den Zweck verfolgen, dass Leuten, die bei den Orts oder Fabrikkrankenkassen u. s. w. aus diesem oder jenem Grunde nicht gegen Krankheit versichert werden koennen, Gelegenheit zur Versicherung gegeben wird, sowie dass gesetzlich Versicherten noch eine Zuschussversicherung ermöglicht wird. Diese Hilfskassen haben einen Mitgliederbestand von ueber 860,000 Versicherten.

Ich will weiter noch mitteilen, dass das gesammte Vermoegen der Arbeiter-Krankenversicherungskassen 163 Millionen Mark betraegt, von denen die

ever, I shall communicate the statistical results demonstrating the success we have achieved in Germany with our obligatory invalidity-insurance legislation. According to the latest reports of the Imperial Bureau of Statistics we have more than 23,000 banks for the purpose of obligatory invalidity insurance. In these banks are insured about ten million people, so that *every sixth inhabitant of Germany is insured against sickness.*

First in significance among the invalidity banks are the local invalidity banks, which exemplify the regulation. These have four and a half million members. Then the larger mill-owners are entitled to organize a factory invalidity bank and to this branch belong about two and a half million of the insured. Besides there are other bank-organizations for the same purpose. Finally I mention the so-called "free banks of aid," which are independent of the obligatory organizations and created chiefly for the purpose of affording people who, for one reason or another, cannot be insured against sickness in the local or factory invalidity banks, an opportunity for insurance and also of enabling those insured under the law to obtain additional insurance. These auxiliary banks have a membership of more than 860,000 persons. I wish to inform you, moreover, that the entire funds of the Workmen's Invalidity Insurance Banks amount to 163 millions of marks, of which the local invalidity banks own 69½, the factory invalidity banks 72, and the banks of aid, 16½ millions.

I believe, I may say, that *no nation in the world has made as extensive provision for the laboring population through public regulations as has Germany.* The objection has been raised against this, that Germany, by thus forcing insurance of those of slender means, has injured private insurance business. This criticism is wholly unfounded. On the contrary, since Germany has introduced the Workmen's Insurance, a fresh increase has taken place in the entire field of insurance;

Ortskrankenkassen ein solches von 69½ Millionen, die Fabrikkrankenkassen ein solches von 72 Millionen und die Hilfskassen ein solches von 16½ Millionen besitzen.

Ich glaube sagen zu koennen, dass *kein Volk der Welt durch oeffentliche Einrichtungen eine so weitgehende Fuersorge fuer die arbeitende Bevoelkerung getroffen hat wie Deutschland.* Dagegen ist der Vorwurf erhoben worden, dass Deutschland dadurch, dass es die Minderbemittelten zwangsweise versichert, das private Versicherungswesen geschaedigt habe. Dieser Vorwurf ist gaenzlich unbegründet. Im Gegenteil, seitdem Deutschland mit der Arbeiterversicherung vorgegangen ist, ist bei uns auf dem Gesammtgebiete der Versicherung ein neuer Aufschwung eingetreten: ein schlagender Beweis hierfuer sind schon die vorhin erwaehnten freien Hilfskassen. Denn wenn neben einer Zwangsorganisation sich grosse Massen von freiwilligen Kassen halten koennen, welche dieselben oder doch aehnliche Zwecke verfolgen wie erstere, so ist das ein sicherer Beweis dafuer, dass die Zwangsorganisation noch nicht das vorhandene—oder besser gesagt: das entstandene groessere—Beduerfnis zu befriedigen imstande gewesen ist. Ein grosser Teil der Minderbemittelten hat den berechtigten Wunsch, ausser den Unterstuetzungen der Zwangsorganisation noch einen Zuschuss zu erhalten, und dieser Teil benutzt die Hilfskassen, um sich den Zuschuss zu sichern. Ein anderer Teil benutzt sie, um sich ueberhaupt gegen Krankheit versichern zu koennen,—und das sind vielfach Kreise, die früher der privaten Versicherung unzugaenglich blieben, aber hierfür durch die Zwangsversicherung der ihnen wirtschaftlich Nahestehenden gewonnen worden sind. Und dies immer tiefer Wurzel fassende Beduerfnis nach Versicherung tritt nicht nur auf dem Gebiete der Krankenversicherung zutage, sondern auf dem gesamten Gebiete der Lebensversicherung: hier ist ein erheblicher Aufschwung bei uns zu konstatieren, seitdem die Arbeiterversicherung in Deutschland obligatorisch

a striking proof of this are the free banks of aid afore-mentioned. For if, beside an obligatory organization, large numbers of private offices are able to exist, which pursue the same or similar objects as the former, it proves conclusively that the obligatory organization is not as yet able to supply the existing, or rather the increasing demand. A large proportion of the less well-to-do has the just desire to obtain additional insurance besides the subvention from the obligatory organization, and that portion makes use of the banks of aid to secure the increased benefit. Another portion makes use of them simply to be able to insure against sickness, and those are to a great extent the classes that formerly were inaccessible to private insurance but have been won over to it by the obligatory insurance of those closely connected with them economically. This ever growing demand for insurance is disclosed not only in the field of invalidity insurance, but in the entire field of life insurance; a considerable increase is here to be observed since the workmen's insurance has been made obligatory in Germany. If you look at the reports of life insurance in Europe during the years from 1870 to 1899, you will find—I shall compare only two countries—that in 1870 England's share of the entire European insurance business was 72 per cent. and Germany's 12 per cent., while in 1899 England participated in such total amount with 50 per cent., but Germany with 23 per cent. You may see from this how greatly private insurance has increased in Germany. At the same time the idea that life insurance had possibly fallen off in England is inadmissible; on the contrary, while in 1870 the amount of insurance in England was 6 milliards of marks, it rose in 1899 to 16½ milliards. It follows that a tremendous increase of insurance during the period indicated is to be credited to England; nevertheless, the comparison of the reports proves the fact that Germany, in spite or rather in consequence of its obligatory workmen's insurance, has relatively had the more

gemacht worden ist. Wenn sie die Tabellen betrachten, welche die Lebensversicherung in Europa waehrend der Jahre 1870 bis 1899 behandeln, so finden Sie—ich will nur zwei Staaten vergleichen—dass im Jahre 1870 an dem gesammten europaeischen Versicherungsbestand England 72% und Deutschland 12% Anteil besass, waehrend von denselben Staaten im Jahre 1899 an dem erwaehnten Versicherungsbestand England mit 50%, Deutschland aber mit 23% beteiligt war. Sie ersehen hieraus, wie bedeutend die Privatversicherung in Deutschland gewachsen ist. Dabei ist natuerlich der Gedanke gaenzlich ausgeschlossen, dass etwa in England die Lebensversicherung zurueckgegangen sei; im Gegenteil, waehrend 1870 die Versicherungssumme in England sechs Milliarden Mark betrug, hob sie sich im Jahre 1899 auf 16½ Milliarden. Daraus geht zur Evidenz hervor, dass auch in England eine gewaltige Zunahme der Versicherung in der genannten Zeitperiode zu verzeichnen ist; gleichwohl ergibt die Gegenüberstellung der Tabellen die Tatsache, dass Deutschland trotz oder vielmehr infolge seiner obligatorischen Arbeiterversicherung sich an der Ausdehnung der privaten Lebensversicherung relativ am erheblichsten beteiligt hat.

considerable share in the extension of private life insurance.

Mr. Florimond Hankar (Belgium): —

Dans son Rapport sur l'Assurance contre la maladie en Belgique, M. Duboisdenghien constate que cette catégorie d'Assurances n'est pratiquée que par les Sociétés de Secours Mutuels et par quelques Caisses Patronales. Il déplore que ces Sociétés ne tiennent pas compte des nécessités techniques. M. Duboisdenghien désire que les Sociétés de Secours Mutuels tiennent des statistiques qui permettront de réunir des éléments pour la formation des tables de maladie. M. Duboisdenghien insiste particulièrement sur ce que les Sociétés de Secours Mutuels ne tiennent pas compte de ce que les risques d'annonce, de maladie vont croissant avec l'âge, de même que les risques de décès.

In his report on insurance against sickness in Belgium Mr. Duboisdenghien makes the statement that this class of insurances is practised only by the Mutual Relief Societies and by some of the "Patronal" Banks (Caisses Patronales). He regrets that the Societies disregard the technical requirements. Mr. Duboisdenghien desires that the Mutual Relief Societies keep statistics which will make it possible to combine the data essential for the compilation of an invalidity table. He dwells particularly upon the fact that the Mutual Relief Societies do not take into account the fact that the risk of sickness increases with age in the same manner as the risk of death.

Mr. Duboisdenghien gives some in-

M. Duboisdenghien donne d'intéressants renseignements sur le nombre des Sociétés de Secours Mutuels en Belgique; il constate que le nombre de ces Sociétés a une tendance à augmenter. Il signale à l'attention du Congrès que la Caisse Générale d'Epargne et de Retraite a organisé dans son personnel une Société de Secours Mutuels organisée techniquement. Il exprime, comme suit, l'opinion des actuaires Belges sur ce sujet.

1er. Principe de la péréquation des ressources et des charges: il faut fixer les cotisations et les indemnités de manière qu'il y ait entre elles un lien rationnel, qu'à l'entrée de chaque membre, la condition d'équilibre entre les engagements qu'il prend envers l'association et les engagements que l'association prend envers lui, soit autant que possible satisfaite.

2e. Comptabilité: il faut que l'association tienne une comptabilité rationnelle et complète: elle doit dresser périodiquement son bilan technique comprenant essentiellement au passif la valeur de ses engagements envers ses membres.

3e. Statistiques: il est indispensable que la Société observe et note soigneusement les faits réels, pour les comparer aux faits attendus d'après les tables de risques qu'elle a adoptées, afin de déterminer le coëfficient de risque qui lui est particulier, et de pouvoir corriger judicieusement, s'il y a lieu, les tables de risques en question.

teresting information about the number of Mutual Relief Societies in Belgium; he states that the number of these societies is on the increase. He brings to the attention of the Congress the fact that the Belgian Savings Bank has organized among its "personnel" a Mutual Relief Society, organized according to the technical requirements. He expresses the opinion of the Belgian actuaries on this subject, as follows:

1. Principle of the sufficiency of the income for the claims: the assessments and benefits must be fixed in such a manner as to establish between them a rational relation so that at the entrance of each member the condition of equilibrium, between the liabilities which he incurs towards the associations and the liabilities which the association incurs towards him, shall be satisfied as nearly as possible.

2. Accounts: the Association must keep reasonable and complete accounts; it must periodically make out its formal balance-sheet, including in its debit the amount of its liabilities towards its members.

3. Statistics: it is essential that the Society observe and carefully note the actual facts of its business, so as to compare them with the expected facts according to the risk tables adopted, in order to determine the characteristic of its own peculiar risks and to be able to correct judiciously, if expedient, the tables of the risks in question.

PROF. ULISSE GOBBI (Italy):—

Les observations faites par M. Duboisdenghien sur le caractère des Sociétés de Secours Mutuels en Belgique, s'appliquent aussi à l'Italie. Pour la Statistique, je n'aurai pas grand'chose à ajouter aux données contenues dans un petit ouvrage dont j'ai présenté une copie au Congrès. L'Organisation de l'Assurance contre la maladie s'impose à tous les Etats qui ont organisé celle contre les accidents du Travail. On a une définition théorique de l'accident du travail et de la

The remarks made by Mr. Duboisdenghien with regard to the nature of the Mutual Relief Societies in Belgium, apply also to Italy. Concerning the statistics I shall not have to add much of importance to the facts contained in a little work, a copy of which I have presented to the Congress. The organization of insurance against sickness is incumbent upon all countries which have organized that against workmen's accidents. There is a theoretical definition of workman's accident

maladie professionelle, mais en pratique il y a plusieurs cas où il est impossible de définir où la maladie professionnelle commence. Par conséquent on a demandé que les mêmes provisions qui sont appliquées pour les accidents du travail, soient appliquées pour les maladies professionnelles. Mais, lorsqu'on demande la différence entre les maladies professionnelles et les maladies ordinaires, on a une question bien difficile à résoudre, parce que presque toutes les maladies pour les ouvriers ont une relation avec leur travail: de la même manière pour les oisifs, on peut dire, en général, que leurs maladies sont les maladies de l'oisiveté. Pour organiser l'assurance pour les maladies, il est nécessaire de s'appuyer sur les Sociétés de Secours Mutuels où, jusqu'ici, elle s'est spontanément organisée. Dans ce rapport on a, d'un côté l'exemple de l'Allemagne et, de l'autre côté, l'exemple de la Suisse où la loi pour l'Assurance obligatoire n'a pas été acceptée par la population parcequ'elle ne s'appuyait pas assez sur les Sociétés de Secours Mutuels. Mais, dans ce but, il est nécessaire que les Sociétés de Secours Mutuels aient une organisation technique correcte, ce qui ne sera pas difficile à obtenir lorsqu'on aura des Sociétés de Secours Mutuels s'occupant exclusivement de l'assurance pour les maladies et abandonnant à d'autres Associations les autres buts qu'elles se proposent à présent. Et comme pour l'organisation technique des Tables statistiques sont nécessaires, ja'i l'hõnneur d'informer mes Collègues que le Ministère du Commerce de l'Italie prépare à présent une nouvelle Statistique des Sociétés de Secours Mutuels, dont les résultats j'espère, pourront être présentés au Congrès prochain.

and of professional disease, but in practice there are several cases in which it is impossible to define where the professional disease begins. Consequently it has been claimed that the same provisions that are applied to workmen's accidents, be applied to cases of professional diseases. But if we inquire into the difference between the professional and the ordinary diseases, we have before us a very difficult question to be solved, because nearly all diseases affecting workmen have some connection with their work; likewise as regards the unemployed, it may be said in general that their diseases are the disease of idleness. For the institution of insurance against sickness one must rely upon the Mutual Relief Societies where, hitherto, it has been naturally established. In this respect we have on the one hand the example of Germany and on the other hand the example of Switzerland, where the law of compulsory insurance was not accepted by the population, because it (the law) did not sufficiently involve the Mutual Relief Societies. But for this purpose it is necessary that the Mutual Relief Societies have a correct technical organization, which will not be difficult to attain if we have such Societies engaged exclusively in insurance against sickness and leaving to other associations the other ends which they attempt to subserve. As for a technical organization statistical tables are necessary, I have the honor to inform my colleagues that the Italian Ministry of Commerce is now preparing new statistics of the Mutual Relief Societies, the results of which, I hope, may be laid before the next Congress.

Mr. Clayton C. Hall (United States):—

I wish to emphasize the wide difference in conditions relating to this subject as they exist in this country and in Europe.

Mr. Messenger's paper gives an excellent summary of the history of this form of insurance in this country, but I would invite attention to the fact that health insurance is conducted upon the largest scale in this country by the Relief Departments of some of the great railroad

companies. There are also the Mutual Aid Societies which grant what they call "sick benefits" in addition to "death benefits," and as Mr. Messenger points out, of late years some of the Accident Insurance Companies have issued certain special health policies, under which the liability is limited to certain specified diseases. The object has seemed to be to make these policies attractive by including diseases that are of frequent occurrence, and at the same time to make them prudent for the Company by limiting them to diseases which are for the most part of brief duration—such as are generally terminated by death or recovery within a very few weeks.

In regard to the general experience in this country there is practically a dearth of statistics. The Mutul Aid Societies have gone on in an entirely empirical way, often disregarding the future liability which is necessarily incurred on account of claims that will increase as their policy holders age. They are apt to ignore the fact that precisely as the rtae of mortality increases with advancing age, so does the liability to sickness and its duration.

In the very admirable paper by Mr. Duboisdenghien, that gentleman points out that precisely similar conditions exist in Belgium, and that it is almost impossible to convince the managers of these Societies of the necessity of looking the facts squarely in the face and making provision to-day for the liabilities that will accrue hereafter. The situation there appears to be similar to that existing here. The managers find that the present revenue exceeds the expenditures, and so they live from hand to mouth, from day to day, believing that while they take in more than they pay out they must be prosperous.

In the paper I have just mentioned, of Mr. Duboisdenghien, he refers to what he describes as the eloquent words of Mr. Georges Paulet, Directeur de l'Assurance et de la Prévoyance sociale en France, from whom he quotes these words: "Il y faut la prudence initiale qui proportionne rigoureusement les resources aux engagements; il y faut les données d'une statistique exacte, la sûreté des calculs mathématiques, le souci scrupuleux de faire à la créance de chacun une contrepartie toujours présente et toujours entière."

With regard to the Relief Departments of the Railroad Companies, to which I have already referred, I would say that they have, in response to suggestions made to them, undertaken to keep statistics of their mortality experience so as to be able to compare it with standard tables, and they classify separately those deaths which occur from natural causes, and those which are incident to the service. It will appear upon a moment's reflection, that deaths due to the hazard of the service will mostly occur among the younger lives, among men who are engaged in handling and moving freight trains. Probably one-half the fatal accidents in railway service occur among men aged from twenty-five to thirty years of age, who are employed upon these goods trains.

In respect to sickness insurance, these departments for the most part have not recognized the need, for their purposes, of collecting statistics in a scientific way. They do, however, compare from year to year the aggregate of sickness experience, with that which is indicated as probable by some standard table, such as the Manchester Unity Experience or that of the Ancient Order of Foresters, both tables compiled in England, and in which the sickness experience is given for each year of life. The compilation of statistics of this sort has not yet been undertaken in this country so far as I know.

Mr. Ralph P. Hardy (Great Britain) :—

It is not my intention to offer any extended observations upon assurance against disability in its general aspect, since all the evidence which has hitherto been before me has satisfied me that in the case of a benefit, in which the personal equation is so large, the liability cannot be represented by any so-called scientific formula. But if I may be permitted to speak of the practice in England, I may say that there its development is protected with the annual renewal clause contained in the accident policies that cover this particular class of business. The case is wholly different when you come to view that increasing class of Associations that claim to supply, by the operation of the great law of scientific average, that void in the family substance when the breadwinner is laid down. It is within my hope, as it is within the expectation of many others, that this question of such and similar Associations will be solved. But while we are waiting for this golden age, it is necessary for the true benefit of the working classes—it may be more productive even than strikes or quarrels to the smooth working of our industrial system, perhaps even better than trusts, and for the stability of the State it is by no means co-extensive with the glittering show of an accumulating capital—that this provision should be found sound to its fullest extent and at least stand upon a sound basis.

This end cannot be achieved by the magic touch of outside forces. Governments cannot be built over night, neither can the revising of statistics which the people will not study and perhaps not understand. Even Actuarial Congresses have their limitations, for even our silver tongues will fail to overcome the invincible reluctance to face the truth. Such of us as have undertaken this class of responsibility must recognize the irresistible force of the ideas that we have to move, and we must condescend to come down from our heights and be content with gradual enlightenment. It is the co-operation of the members of these Associations that we must invite, without whom nothing will be achieved and all high-handed attempts to put the Associations on a proper financial basis will really delay the desired consummation.

There is laid before the Congress a plan which I have found effectual for teaching this great truth. That is this; to exhibit to the members of the Association, for any particular year, the quantity of sickness expected by any table and to compare that with the actual outcome. It is within my own knowledge that this system has been successfully adopted in several Societies in England with the effect of putting down criticism and bringing down the amount of sickness within the compass of the premiums.

Referring to Mr. Watson's tables I may point out that some of the apparent changes in the rates of sickness are not due to any change of health but to a difference in the degree of claims. At one time many of these Societies were social organizations of a better class, and the members made it a matter of pride not to claim. In recent days that feeling has passed away and they are purely business organizations where every possible claim is offered. Hence the rate of claim appears to be larger than it was previously. It will be well to examine these tables with attention. They reveal a frank experience, set down with great care and great skill. It is a great deal better than the experience of the British Companies. This particular experience is a genuine outcome.

Mr. Hiram J. Messenger (United States) :—

Mr. President and Gentlemen: The history of Health Insurance in the United States is divided into two periods; the first covering the early attempts to establish this insurance in this country commencing along in 1847-8 and continuing on for five years. These attempts were all failures. Some of them were much worse than failures. There is little in this part of it that is of value to us. Probably the only lesson that we can draw, is the necessity, in undertaking such a complex business, of having adequate financial backing, competent business men of executive ability, of pursuing a conservative policy and of making a thorough and scientific study of the subject. The second period has covered simply the last six years, when the business was undertaken by the Stock Accident Companies. The competition of these companies resulted in the issue, in conection with their accident policies, of a limited health policy covering a specified period. The tendency for the last six years has been to strike out restrictions and to generally broaden the contract, until now a complete health policy is issued by several companies.

On the limited health policy the experience has not been very favorable. As regards the complete health policy, there is not at present sufficient experience to be used as a guide, but as far as it goes the conclusion is that it will have to be issued with great care and carefully watched.

The most serious problem in connection with the subject is the method of dealing with claims, and I am not aware, since the subject has been taken up by the Stock Accident Companies, that really any progress has been made in this matter. Claims are paid to the just and the unjust alike, and it seems impossible to adopt any method which will prevent the payment of a great number of unjust claims.

Mr. James Chatham (Great Britain) :—

Mr. Watson has given us not only the experience of the Manchester Unity and Odd Fellows, but also that of several other Societies, and it is with reference to the latter that I should like to make one or two remarks.

Society B. is easily recognized by those of us who come from across the water, and I should like to point out that its experience relates to a period extending farther back than that of any other of the Societies having experience on this subject.

If you will look at table 5 of his paper on page 485, you will find that Mr. Watson goes back to 1884-91; that is to say the earlier period is nineteen years ago. Now as he says in his paper the period is a very important factor in making comparisons of this nature. Shortly before I sailed I examined the experience of Society B. for the same period as that of the Manchester Unity, namely 1893 to 1897, and, while I am speaking entirely from memory, I think I am right in saying that for a considerable period of life, the total sickness was less than that of the Manchester Unity, and afterwards higher. We can see therefore that it is very important to take into account the period to which the sickness relates.

Mr. George King (Great Britain) :—

I desire to call your especial attention to the book of Mr. Watson. It does not appear from his paper that he is the author of the new ex-

perience of the Manchester Unity. I would recommend anyone, who takes an interest in those subjects, to examine Mr. Watson's volume which is a magnificent work, well done. The next point, to which I wish to refer, is sickness assurance for women. So far as I can see, this has not been dealt with by any of the Societies. It is a subject of growing importance, but is little known, because hitherto we have not had much sickness assurance for females. The tables prepared by the Registrar of the Friendly Societies show a table for females, but the introduction to the volume is so meagre that we can derive very little information from it and we are obliged to get all our information from the table itself. That shows a very heavy sickness experience.

I have recently taken up the experience of a female society, The Royal National Pension Fund for Nurses, and I find that, excluding altogether the special disability due to maternity, the sickness comes out fifteen or twenty per cent. higher than that reported by the Registrar of the Friendly Societies, which already shows very high experience. But the remarkable point is that the mortality comes out exceedingly low. The sickness, as I have said, is twenty per cent. higher than in the Friends' Societies, but the mortality for the past ten years has been only about one-third of that for females in the British Offices' experience as recently published. It is a peculiar thing that there should be such a difference. Yet there is, though incomprehensible. This leads me to my last point. I think we need to investigate more thoroughly the relations which exist between sickness and mortality. One would *prima facie* imagine that as sickness increased mortality increased, but they seem rather to have a different relation to each other. Mr. Watson's book shows that in the districts in England where sickness is the greatest the mortality is the lowest, and my own experience with the nurses is that, with their heavy sickness experience, there is an abnormally low mortality experience. This is an exceedingly important matter in the consideration of the valuation of sickness funds for females, and I should like to see it more fully discussed.

Subject, *The Growth of Life, Health and Accident Insurance, Annuities, Pensions and other Operations requiring Actuarial Advice.*

Papers.

Life Assurance in Australasia, by Mr. Carment of Australia.

Industrial Life Assurance in Australasia, by Mr. Eedy of Australia.

Friendly Societies in New South Wales, by Mr. Trivett of Australia.

Développement de l'Assurance Vie, Assurance dite "Assessment," Sociétés Fraternelles, Assurances contre les Accidents, Assurances garantissant la Responsabilité civile des Patrons Assurances contre la Maladie, Capitaux Différés, Rentes Viagères, Pensions de Retraite pour la Vieillesse, Pensions d'Ouvriers, et toutes autres opérations nécessitant l'avis des Actuaries: ce que l'on peut constater en Belgique, by Mr. Lembourg of Belgium.

On the Growth in Canada of Life Insurance, Assessment Insurance, Friendly Societies, Accident Insurance, Employers' Liability Insurance, Health Insurance, Pure Endowment Business, Annuity Business, Old Age Pensions, Workmen's Pensions, and other operations requiring Actuarial Advice, by Mr. Blackadar of Canada.

Das Wachstum der deutschen Lebensversicherung, by Mr. Lindemann of Germany.

Die Entwicklung der deutschen Arbeiter-Versicherung, by Mr. Meyer of Germany.

The Progress of Provident Institutions in the United Kingdom, by Mr. Brabrook of Great Britain.

On the Growth of Life Insurance, Assessment Insurance, Pure Endowment Business and Annuity Business, by Mr. Chatham of Great Britain.

The Growth of Accident and Employer's Liability Insurance in Great Britain, by Mr. W. R. Strong of Great Britain.

Old Age and Workmen's Pensions in Great Britain and Ireland, by Mr. Woods of Great Britain.

On the Growth of Life Assurance in Japan, by Mr. Aso of Japan.

Growth of Assessment Insurance in Japan, by Mr. Awadzu of Japan.

Report for the United States of America on the growth and progress of Institutions and Conditions requiring Actuarial Advice, by Mr. Fackler of the United States.

DR. EUCKEN-ADDENHAUSEN (Germany):—

Zu den Ausfuehrungen, die dem Kongress ueber die Entwickelung der deutschen Arbeiter-Versicherung in der Schrift des Herrn Dr. Hugo Meyer gemacht worden sind, will ich Ihnen einige Ergaenzungen geben, welche dadurch noetig geworden sind, dass in der Zwischenzeit ein neues Gesetz in Deutschland publiziert worden ist, das in sehr erheblichem Masse die Arbeiter-Versicherung vertieft hat. Nach dem Gesetze vom 25. Mai 1903 ergeben sich im wesentlichen die folgenden Neuerungen:

1. Vom ersten Januar 1904 ab werden neben den Arbeitern ohne weiteres gesetzlich gegen Krankheit versichert sein die Handlungsgehilfen und Handlungslehrlinge, deren jaehrliche Bezuege 2000 Mark nicht uebersteigen;

2. Vom gleichen Zeitpunkte ab werden die Geschlechtskrankheiten inbezug auf die Leistungen der Krankenkassen jeder anderen Krankheit gleich gestellt sein;

3. Ebenso erhoeht sich die Dauer der Woechnerinnen-Unterstuetzung allgemein von vier auf sechs Wochen;

4. Ganz neu eingefuehrt werden kann die sogenannte Schwangerschafts-Unterstuetzung; endlich

5. Und das ist die Hauptsache im neuen Gesetze—betraegt vom ersten Januar 1904 ab die gesetzliche Dauer der Krankenunterstuetzung nicht mehr

To the information regarding the development of German workmen's insurance, which was imparted to the Congress in the paper of Dr. Hugo Meyer, I wish to add a few supplementary details which have become necessary by the fact that in the meanwhile a new law has been promulgated in Germany elaborating the question of workmen's insurance in a high degree. According to the law of May 25, 1903, the following modifications occur:

1. From the first of January, 1904, there will be insured against sickness, without further notice, the commercial clerks and office-boys, whose annual income does not exceed 2000 marks.

2. From the same date sexual disease will be placed on a par with any other sickness in the functions of the invalidity banks.

3. Likewise the term of an allowance to women in confinement is generally increased from four to six weeks.

4. As an entirely new benefit may be mentioned the so-called pregnancy-allowance; finally,

5. And that is the main point in the new law—from the first of January, 1904, the legal term of invalidity insurance will no longer be thirteen but twenty-six weeks.

Thence arise new relations with the other branches of workmen's insurance. In the first place new situations are

dreizehn, sondern sechs und zwanzig Wochen.

Hieraus ergeben sich neue Beziehungen zu den uebrigen Zweigen der Arbeiter-Versicherung. In erster Linie entstehen nach dem neuen Gesetze zwischen der Krankenversicherung und der Unfallversicherung insoweit andere Verhaeltnisse, als die Unfallversicherung mit der vierzehnten Woche nach dem Unfall eintritt, sodass, wenn die Krankenunterstuetzung, statt 13 Wochen wie bisher, nunmehr 26 Wochen lang gewaehrt wird, gleichzeitig zwei Unterstuetzungen, naemlich die auf Grund des Krankenversicherungs- und die auf Grund des Unfallversicherungs-Gesetzes Platz greifen. Und doch gilt als Grundsatz, dass keine gesetzliche Doppelversicherung eintritt. Wie soll das nun werden? Der Gedanke ist der, dass die Kranken-Unterstuetzung so lange weiter zu gewaehren ist, bis feststeht, ob die Verletzung eine derartige ist, dass der Verletzte zu einer Unfall-Unterstuetzung berechtigt ist. Sobald diese geleistet werden muss, geht sie vor, weil sie meist die fuer den Arbeiter ergiebigere ist und von den zu Berufsgenossenschaften vereinigten Arbeitgebern allein geleistet wird.

Ferner werden sich infolge des neuen Gesetzes auch gewisse Aenderungen in den Beziehungen der Krankenversicherung zur Invalidenversicherung herausstellen. Die Invalidenversicherung bewirkt eine Rente nach Ablauf der 26sten Woche nach eingetretener Erwerbsunfaehigkeit. Da nun nach dem neuen Gesetz die Dauer der Krankenunterstuetzung von 13 auf 26 Wochen ausgedehnt worden ist, so tritt der erwuenschte Fall ein, dass eine zeitliche Luecke zwischen dem Aufhoeren der Krankenunterstuetzung und dem Beginn der Invalidenrente nicht mehr besteht. Es wird der Fall eintreten, dass ein Arbeiter, welcher arbeitsunfaehig geworden ist, ein halbes Jahr lang von der Krankenversicherung verpflegt wird, dass er dann aber nicht preisgegeben wird, sondern nunmehr eine Rente bekommt und dadurch vor bitterem Mangel geschuetzt ist.

Oft ist die Frage aufgeworfen worden, developed, according to the new law, between invalidity insurance and accident insurance in that the latter begins with the fourteenth week after the accident, so that, if the invalidity insurance is now granted for twenty-six weeks instead of thirteen weeks as hitherto, two allowances are made simultaneously, that given by the invalidity insurance law and that given by the accident insurance law. And yet the principle obtains that no legal double insurance shall take place. What is to be done? The idea is that the invalidity insurance is to continue until it is ascertained whether the injury is such as to entitle the injured to an accident insurance. As soon as this has to be allowed, it takes precedence, because it is generally the more advantageous for the workman and is afforded exclusively by the employers united in trades associations.

Furthermore, the new law involves certain changes in the relations between invalidity insurance and accident insurance. The latter produces a benefit at the end of the twenty-sixth week after disability began. The term of invalidity insurance having been extended, according to the new law, from thirteen to twenty-six weeks, it follows that a temporary gap between the cessation of the sick-pay and the beginning of the benefit from the accident insurance no longer exists. A workman who has become incapable of earning a livelihood, will be taken care of by the invalidity insurance for half a year, and thenceforth will not be without means, but will receive a further benefit and thereby be protected against indigence.

The question has often been raised, whether the workmen's insurance as we have introduced it in Germany, that is the obligatory workmen's insurance, has stood the test. This question can be answered affirmatively. From the words of Professor Gobbi it was inferred that our workmen's insurance serves elsewhere as a prototype. It was initiated by the well-known message of His Majesty, Emperor William the Great, in 1881, who accurately de-

ob sich die Arbeiter-Versicherung, wie wir sie in Deutschland eingefuehrt haben, also die obligatorische deutsche Arbeiter-Versicherung bewaehrt hat. Diese Frage ist zu bejahen. Aus den Worten des Herrn Professor Gobbi ging hervor, dass man sich unserer Arbeiter-Versicherung anderwaerts als Vorbild und Muster bedient. Sie ist eingeleitet worden durch die bekannte Botschaft Seiner Majestaet Kaiser Wilhelm's des Grossen im Jahre 1881, welcher die Aufgaben und die Ziele der deutschen Arbeiter-Versicherungs-Gesetzgebung dahin praezisierte, dass es zwar eine schwere, aber eine der hoechsten Aufgaben christlicher Gemeinwesen sei, fuer die wirtschaftlich Schwachen in richtiger Weise zu sorgen, und dass dazu die Mitwirkung nicht nur des Staates, sondern aller Beteiligten erforderlich sei. Aber neben der Verfolgung dieses socialpolitischen Gedankens hat die deutsche Arbeiterversicherung schon derartige praktische Erfolge erzielt, dass sie sich auch volkswirtschaftlich bewaehrt hat. Seit dem Bestehen unserer obligatorischen Arbeiterversicherung aller Zweige und Arten hat sich ergeben, dass die deutschen Arbeiter durch sie nicht weniger als 750 Millionen Mark mehr an Entschaedigungen erhalten haben, als sie an Beitraegen fuer dieselbe gezahlt haben! Und auch fuer diejenigen, welche die hierzu erforderlichen Zuwendungen gemacht haben, war die Arbeiterversicherung, die zunaechst die Hebung der Lebensstellung der Arbeiter und ihren Schutz gegen Mangel und gegen Sorgen bezweckt, kein Ungluecck. Mit der Arbeiterversicherung gleichzeitig, d. h. in der Zeit, seitdem die Arbeiterversicherung in's Leben getreten ist und die Leistungen fuer Arbeiter vermehrt worden sind, *hat sich der bisher groesste Aufschwung Deutschlands in kommerzieller und industrieller Beziehung vollzogen!*

Aber trotzdem stehen wir nicht auf dem Standpunkte, dass nunmehr ein Stillstand in der Fuersorge fuer die wirtschaftlich Schwachen eintreten duerfe, sondern wir sind im Gegenteil davon ueberzeugt, dass tuechtig weitergearbeitet werden muss. Denn die

fined the problems and aims of the German Workmen's Insurance Legislation to the effect that it was one of the highest, though most difficult, problems of Christian communities to provide for the economically weak in a proper manner, and that for this purpose the co-operation, not only of the state, but of all those interested, was requisite.

But beside the pursuance of this social-political idea, the German workmen's insurance has achieved such practical results that it has stood the test also from an economical point of view. Since the establishment of our obligatory workmen's insurance in all its kinds and branches it has been proved that the German workmen have, by its agency, received no less than 750 million marks more in compensation than they paid in contributions to the funds! Also for those who furnished the necessary appropriations for this purpose, the workmen's insurance which primarily had in view the improvement of the workmen's social station and their protection against want and anxiety, has proved no disadvantage. Simultaneously with the workmen's insurance, that is during the period since its inauguration and the increase in the provisions made for workmen, *the greatest development of Germany in its commercial and industrial aspects has taken place!*

Nevertheless we are not in a position to allow the provision for the economically weak to henceforth come to a standstill, but on the contrary we are convinced that the work must be carried on energetically. For the social question is one of constant agitation, and its task varies according to the degree of culture and economic policy of a nation. If anywhere, it is here that Goethe's words hold good:

"Werd' ich zum Augenblicke sagen:
'Verweile doch, du bist so schoen'—,
Dann magst du mich in Fesseln schlagen,
Dann will ich gern zugrunde gehn."

To be sure, social-political aspira-

soziale Frage ist eine in stetem Fluss befindliche Frage, und ihre Aufgabe veraendert sich je nach dem Stande der Kultur und der Wirtschaft eines Volkes. Wenn irgend wo, so gilt hier das Goethe'sche Wort:

"Werd' ich zum Augenblicke sagen:
'Verweile doch, du bist so schoen'—,
Dann magst du mich in Fesseln schlagen,
Dann will ich gern zugrunde gehn."

Freilich erfordern sozialpolitische Schritte weise Maessigung und sozialpolitische Gesetze ruhiges Ausreifen; aber wenn wir immer daran tuechtig weiterarbeiten, sind wir auch "toujours en vedette."

tions require wise moderation and social-political laws, quiet growth, but if we continue to work at it effectually, we must also be "toujours en vedette."

Mr. David Carment (Australia):—

I desire to emphasize one or two points about the conduct and the progress of the life insurance business in Australasia which has many points of interest.

You will observe that the mortality of the general population in Australia is wonderfully low, averaging not more than about twelve per thousand of the living. The business existing in proportion to population appears to be higher than in any other part of the globe, the United States not excepted. We have no policies not taken. We never issue a policy until the premium has been actually paid in cash, and we find that practice in very few companies in other countries. In fact in general the companies do not do it. The expenses are light, averaging not more than about twenty per cent. of the total premium income, or thirteen per cent. of the gross income. Rates of commission are generally paid on the sum assured and not upon the premium, so that we do not pay unduly high rates of commission upon short term endowments.

The rate of interest has been, of course, falling in common with other parts of the world. Fifteen or twenty years ago it was as high as six per cent. Now it is reduced to a little over four and a half. The tendency is at present slightly upwards. On the point of State Supervision, at present, our legislation is in accord with that of England, and although since the establishment of the Commonwealth there has been some tendency to legislate on the pattern of the United States, imposing a State standard of valuation, yet we are not much in favor of that course and are following the British principle of greater publicity. Protection of policies against creditors is generally effected on a different principle than that followed in the United States or England, as in Australia a policy is generally payable to a man's executors, and it needs protection to a greater or less extent. Absolute assignments may be affected simply by endorsement on the policy. As regards taxation of the companies we were until recently very free from taxation, but of late the necessities of the government have caused the imposition

of various kinds of taxes. Non-forfeiture regulations are applied to the fullest extent.

The rating of sub-standard lives was discussed this morning, although I did not speak on it. In Australia we are much prejudiced in favor of accepting extra premiums for a term of years, equivalent to a certain number of years added to the life, and perhaps one in three or four of all the lives proposed are so treated. We are not in the habit, as is the common rule in America, of proposing to the life that a short term endowment be taken instead of a whole life policy.

I think it will be admitted that in Australia the results obtained by insurance companies are at least equal to those that have been obtained in any other part of the world, as regards the proportion of the business to population, the rate of expense and the exceedingly large profits which have been declared.

Mr. Kiyosuke Awadzu (Japan):—

I wish to make some remarks on the paper of Mr. Aso, who unfortunately could not attend this Congress. He states that the average amount of individual policies in Japan is so small that it is rather less than that of the American Industrial companies. This statement coincides with that of Mr. Hunter of the New York Life Insurance Company, who dealt with the mortality of the Japanese, and to whom we feel grateful because of his being the first actuary of an important company to investigate the mortality of the Japanese.

Life insurance in Japan resembles Industrial insurance in many respects, such as high rate of expense, high rate of mortality and high percentage of lapsed and surrendered policies.

Mr. Hunter has looked into the experience of our twenty-seven companies and comparing the death rate with the American Table of Mortality has concluded that the mortality of the Japanese is fully twenty per cent. greater than that of the American Companies on risks in the temperate zone. The reason that we do not achieve a better result is chiefly because of the enormous percentage of lapsed and surrendered policies, which sometimes exposes our companies to much greater risk than was expected, despite a comparatively strict medical examination. For those who are interested in Japanese mortality Mr. Yano has prepared a table that deserves some attention, but the materials are by no means what they should be, and although it might be most reliable as compared with many other tables hitherto used in Japan, great judgment must be exercised when, as in other tables, the mortality among assured lives differs in a large degree from that of the whole population. In the present state of life insurance in Japan it is safe to assume that the mortality among assured lives is higher than that of the population in general, especially in the older ages.

Mr. Morris Fox (New Zealand):—

As the representative of New Zealand, I am in a somewhat peculiar position, because it happens that my office is practically the only one having its head office in New Zealand, and therefore I cannot fail, in talking of the practice in New Zealand, to discuss the practice of my own office. But any difference in practice there should receive attention, because New Zealand is one of the most important members of the group of colonies. It is very important from a life insurance point of

view, as the companies look upon it as the most profitable of all the colonies at the present time from the standpoint of new business.

The mortality is even lower than in any other Australian state, and a higher average sum assured exists. In Australia the average is twenty-four pounds, while in New Zealand it is thirty pounds.

There are one or two differences in practice. The suicide clause is limited by most companies here to one or two years, in New Zealand it is limited to six months. We consider that the limit of time is immaterial; a half year has the same effect as a year. Furthermore, if a suicide takes place in the first six months, the claim may be paid if the management is satisfied that there was no intention to defraud the company when the policy was taken out. The practice in regard to low-rated lives in New Zealand is different from that in Australia. We divide all those not accepted at ordinary rates or declined into three classes and we assure them for about ten shillings per cent. or twenty shillings per cent. extra on the sum assured, irrespective of the age. A great majority of the risks are charged ten per cent. extra.

Mr. Carment, in his paper, says that it may be necessary to pay agents a supplemental commission by a weekly or a monthly allowance. I think, practically, it is always done. The agents get from one pound to four pounds per cent. of weekly allowance and a bonus on the business done for the year.

The expenses are heavy because it necessitates keen work to get business and to retain it when secured, although considerable success in so doing is attained.

Mr. Robert G. Hann (United States):—

Favorable mortality in Australia is unquestionably a fact and it is to be expected when compared with the mortality of other countries, such as the United States and some European countries, because you will find that the endowment assurance alone is just about fifty-five per cent. of the business that has been issued on life and term forms.

With regard to a comparison of the mortality in Japan and this and other countries, it is to be remembered that the leading Japanese companies do not assure against suicide. The American Companies cover deaths from suicide provided they fall within the terms of their contracts.

Mr. Hector Duplaix (France):—

Pour traiter d'une façon complète la question du développement, en France, des Institutions de Prévoyance, il serait indispensable de produire quelques statistiques. Certaines de ces statistiques font défaut, d'autres existent, mais comme je n'étais nullement préparé à traiter la présente question je n'ai, actuellement, aucun document sous la main, et je suis obligé de prier mes collègues de vouloir bien m'excuser de ne pouvoir illustrer, par des chiffres, les renseignements sommaires que je vais fournir au Congrès.

To treat in a thorough manner the question of development, in France, of savings institutions, it is indispensable to bring forward some statistics. Some of these statistics are lacking, others exist, but as I was in no wise prepared to treat the present question, I have now no document on hand, and I must ask my colleagues to kindly excuse my not being able to illustrate by figures the summary statements which I am going to impart to the Congress.

Fifteen French Joint-Stock Companies and one Mutual Society carry

15 Compagnies Françaises par Action et Une Société Mutuelle réalisent en France des Assurances sur la Vie. Cette dernière Société appliquant pour ses primes le tarif sans participation des autres Compagnies. Dans notre Pays, l'Assurance sur la Vie pénètre de plus en plus dans la masse de la population; pour s'en rendre compte, il suffit de constater l'importance croissante des sommes versées, chaque année, aux Compagnies, par ce mode de prévoyance. Pourtant, le montant des capitaux assurés ne paraît pas suivre une progression très marquée. Ce résultat nous paraît dû à deux causes.

1er. La baisse du taux de l'intérêt a obligé les Compagnies Françaises d'augmenter leurs tarifs, il y a quelques années;

2e. Les Assurances à primes élevées (assurances mixtes et à conditions multiples) tendant à se substituer aux assurances pour la Vie Entière qui étaient réalisées dans le passé et le montant moyen du capital assuré pour chaque police a fortement diminué durant ces dernières années. Nombreuses sont les Sociétés qui opèrent chez nous, mais comme ces Sociétés ne publient généralement pas leurs affaires réalisées en France, nous ne pouvons pas donner une idée, même approximative, du développement de leurs assurances dans notre Pays.

Caisses de l'Etat

Si les versements individuels n'augmentent pas sensiblement à notre Caisse Nationale des Retraites, les versements collectifs deviennent de plus en plus importants en raison de l'application des lois relatives aux ouvriers mineurs, aux Sociétés de Secours Mutuels et à la réparation des accidents de travail, et aussi en raison de ce fait, que les Caisses de Retraites des Compagnies de Chemin-de-Fer font, plus que par le passé, appel à la Caisse pour la constitution des pensions attribuées à leurs agents.

La Caisse Nationale d'Assurances réalise des assurances pour la vie entière, Mixtes et Temporaires, mais seulement en petit nombre, malgré les

on the business of life insurance in France, the last-named society applying to its premiums the tariff without participation of the other companies. In our country life insurance finds more and more favor with the mass of the population; to account for this, it is sufficient to state the increase in the sums paid to the companies, every year, through this mode of saving. For all that, the amount of the capital insured does not seem to indicate a very marked advance. This result seems to us due to two causes.

1. The decline in the rate of interest compelled the French companies to raise their tariffs several years ago.

2. The insurances with high premiums (mixed insurances and those with many conditions) tend to take the place of the insurances for life that were effected in the past, and the average amount of the capital insured for each policy has greatly diminished these last few years. The companies operating in France are numerous, but as these companies generally do not publish the business established in France, we cannot give even an approximate idea of the growth of their insurances in our country.

State Banks

If the individual payments do not sensibly increase at our National Tension Bank, the collective payments are becoming more and more important by reason of the application of the respective laws to the mining laborers, to the Mutual Relief Societies and to relief in case of labor accidents, and also by reason of the fact that the Pension Banks of the Railway Companies call upon the bank oftener than in the past for the settlement of pensions assigned to their agents.

The National Insurance Bank effects insurances for life, mixed and temporary, but only in a limited number, notwithstanding the advantages of its tariff. The lack of agents for these transactions, little known to the public, seems to us to explain this result sufficiently.

avantages de son tarif. L'absence de sollicitation pour ces opérations, peu connues du public, nous paraît expliquer suffisamment ce résultat.

Caisses Patronales

La loi du 25 Décembre 1895, et l'attente d'une loi sur les retraites ouvrières paraissent avoir inquiété les patrons et ralenti l'impulsion vers la création de Caisses nouvelles.

A propos des Caisses Patronales, une tentative de certaines Compagnies Françaises mérite d'être signalée: elle consiste dans l'essai d'application aux assurances ouvrières de la Combinaison, dite d'Assurance de capital différé, avec remboursement des primes versées en cas de décès, de départ ou de renvoi.

Assurance Assessment

L'introduction, en France, par une Compagnie étrangère, de l'Assurance dite d'Assessment a donné lieu, il y a quelques années, à un important mouvement d'affaires. Le système n'a d'ailleurs pas tardé à produire les effets décevants, signalés d'une si magistrale façon par le Bureau Fédéral des Assurances, lors d'une demande de concession, en Suisse. Nous ajouterons qu'à la suite de réclamations nombreuses, la Société a renoncé à réaliser, dans notre Pays, ce genre d'opérations.

Sociétés de Retraites, de Capitalisation, etc.

Nous dirons enfin que notre Pays est envahi par une multitude de Sociétés parasites qui s'intitulent, Sociétés de "Retraite," de "Capitalisation," "d'Assurances Mutuelles," etc. Sous le couvert de la Mutualité, ces Sociétés drainent la petite épargne, qui pourrait être utilement employée à la véritable prévoyance. Grâce à leur irréalisables promesses, elles font souscrire un nombre important de petits contrats préparant ainsi pour l'avenir de cruelles désillusions à leurs sociétaires. Et il est à craindre, qu'en présence de l'insuffisance des résultats produits par leur épargne, ces derniers n'arrivent à envelopper dans le même discrédit, les Institutions bonnes ou mauvaises.

Patronal Banks

The law of December 25, 1895, and the expectation of a law regulating laborers pensions seem to have alarmed the proprietors and retarded the impulse towards the creation of new banks.

In reference to Patronal Banks, an attempt of certain French companies deserves to be pointed out; it consists in the effort to apply to the workmen's insurances the combination called insurance of capital deferred, with return of premiums paid, in case of death, or of change of residence or occupation.

Assessment Insurance

The introduction into France, by a foreign company, of Assessment Insurance, gave rise a few years ago to an important business movement. The system, moreover, was not long in producing the deceptive effects, pointed out in such a masterful manner by the Federal Bureau of Insurances, in Switzerland, at the time of an application for a concession. We will add that, in consequence of much opposition, the company has relinquished all claim to carry on that kind of business in our country.

Companies for Pensions, Endowment, etc.

We will state, finally, that our country is invaded by a multitude of parasitic companies, calling themselves companies for "Pensions," "Endowment," "Mutual Insurance," etc. Under the cover of mutuality, these companies drain the small savings which might be profitably used for genuine provision for the future. Thanks to their impracticable promises, they obtain signatures to a large number of small contracts, thus preparing cruel disappointments in the future for their policy holders. It is to be feared that in view of the insufficient results produced by their savings, these policy holders may come to hold in the same degree of discredit good and bad institutions.

Subject, *University Instruction upon Actuarial Subjects.*
Papers.

On the Instruction given in Canadian Universities on Actuarial Subjects, by Mr. Sanderson of Canada.

De l'instruction donné en France sur les sujets traités par les actuaires, by Mr. Picquet of France.

Vorlesungen über Versicherungs-Wissenschaft an deutschen Hochschulen, by Mr. Manes of Germany.

Ueber versicherungsmathematischen Unterricht an den Universitäten, by Mr. Von Bortkiewicz of Germany.

On the Instruction given in Universities on Actuarial subjects, by Mr. Young of Great Britain.

Notiz betreffend den Unterricht der Versicherungs-Wissenschaft auf der Universität, by Mr. Moser of Switzerland.

On Instruction given in Universities and Colleges on Actuarial Subjects, by Mr. De Boer of the United States.

Mr. Walter S. Nichols (United States) :—

The paper of Mr. De Boer, as well as that of Mr. Young, has been naturally confined to a consideration of university instruction on actuarial subjects, with a special view to their utility in preparing the student for engaging in insurance or other allied occupations.

Mr. De Boer points out a most important result which is likely to follow in a reflex influence on the business itself. Insurance as a profession, is bound to be elevated, as he says, to a higher plane, and those engaged in it are bound to secure a wider recognition from the public at large when the study of its principles has been engrafted into the curriculum of the University.

It seems to me that it requires no argument to prove a proposition of that kind. When a subject like insurance is brought to general public attention by being introduced into the curriculum of the large universities of our land, it almost inevitably follows that the attention of the people generally will be drawn to that subject and especially to its scientific features.

But there is another aspect to this question, which is much more far reaching and to my mind vastly more important. For many years I have been an earnest advocate of introducing actuarial science into our collegiate courses. My idea is that it should not be limited to special classes of students—those who contemplate pursuing some special occupation in which it becomes of immediate practical utility—but should be recognized as one of those important branches that should be introduced into the curriculum for the disciplinary purposes for which universities are established. The disciplinary value of mathematics I believe lies mainly in the accurate and logical reasoning which it involves. Unless that be so, I do not know why some of our higher mathematical branches could not perhaps with profit be eliminated in favor of other departments of study in the general college course. We know that they are made optional and I question whether their disciplinary value has been fully appreciated. There are comparatively few who have special occasion to utilize to any extent the higher branches of mathematics, and, except in the mental training involved, it is hard to ascertain where such branches serve a useful purpose. Especially in its more recent development, mathematics is the highest and purest type of logic. Those of us who have followed even cursorily the more recent development of

mathematics, must have been struck by the extent to which the idea of quantity itself has been in a measure eliminated from the discussion. In theory our reasoning proceeds on well established fixed premises to a conclusion. As a matter of fact, every premise which we use is a probability with varying degrees of certainty, and the conclusions which we build up and the judgments which we form in every day life, as well as in our business and professional pursuits, are in reality probabilities whose value depends on those mathematical principles which underlie the science of the actuary.

In the failure to comprehend this fact, it seems to me, lies a large proportion of the mistaken doctrines, theories and conclusions which are met with in both professional and business life.

In the medical world this mathematical training is needed to weigh the indications on which the physician bases his diagnosis, his remedies, and the deductions which he is so apt to draw from imperfect statistics. Every actuary no doubt is familiar with the errors which medical men are constantly making in undertaking to draw conclusions from statistics regarding diseases, and in their methods of dealing with conclusions they show how imperfect often has been their mathematical training. In the legal world a thorough grasp of this subject would recast many of our antiquated and technical rules of evidence as well as of some legal principles themselves. In theology many a cardboard system of doctrine would tumble to its foundations if the full value of the premises and arguments were weighed on the actuary's scale. Many a disastrous business venture, too, would be abandoned if the judgment of the business man had been disciplined in the school of probabilities.

More than any other branch of higher mathematics, it seems to me, the actuary's science may claim a place in the general training of the college curriculum, regardless of the after-life of the student.

Mr. Charlton T. Lewis (United States):—

My only right to speak upon this matter arises from the incident that about five years ago I was called upon to deliver a course of lectures in Cornell University, upon the Principles of Insurance, and, later, one in Harvard University at Cambridge, and one in Columbia University in New York, upon Life Insurance, its Principles and its History.

These courses of lectures were given to the students of the several universities and were, I believe, the first university courses ever delivered in the United States upon the subject of Insuranc.

In preparing and presenting these lectures I had in mind one definite end which has not, so far as I know, been definitely brought out in the papers upon this subject now before us. I regarded them not in any sense as a course in actuarial science, or even a special preparation for such a course; not in any sense as a training in mathematical logic, but solely as a means of filling what seemed to me then and seems to me no less now, a noteworthy gap in the group of studies commonly offered in our universities. The history of civilization and the development of human society during the last five generations have been so intimately interwoven with the discovery and application of the principles of insurance in all its aspects, the importance of this study, both in its theory and in its practice, has in every way outgrown the place these principles hold in education. In our schools, in our universities, in our ordinary popular literature, in the larger literature, is so much of the delight of life, the conception of insurance in its practical bearings and

in its theoretical significance has not yet found the recognition and exercised the influence which is its due. Its workings in furthering social progress and in making possible the modern system of industry and trade must be far more prominent in the historical and economical thought of the intelligent public than they have ever yet been, before that thought can justly and fully reflect the facts of our new civilization. It seemed to me that it would be a contribution to education, and to the general enlightenment, if this subject could be brought home to the minds of the young in something like its true relations to the history and development of society.

When we look back two hundred years and remember that at that time hardly any practical application of any branch of insurance had been made a recognized branch of business activity, and look at the extent to which the financial, the commercial and the social world now depend upon it, we see nothing short of a revolution in human affairs; one which implies a revolution in men's habits of thought, in their state of mind, in their attitude towards life and towards each other. And this revolution has been brought about by implanting in their minds a sense of the principles of insurance as a part of the basis of thought, as one group of the premises assumed in all practical reasoning and judgment. Thus the subject has an important place in the social life to-day which finds no adequate representation in our educational system, and which to be taught in its fullness needs to be brought into the curriculum of our universities.

It was in this aspect of the case, as a part of social science, as one of the dominating features in the development of modern civilization, that I strove to bring into the course of university training and education the principles of insurance and suggestions of their practical applications, and so far as those labors had any value, it lay, not in the preparation of special students for professional work, but in the preparation of educated young men for a keener and truer apprehension of the social life around them, and of the development of the civilization in these recent centuries.

I have no time to dwell on this, and it is not necessary. The suggestion of the thought in outline is sufficient for you, gentlemen, all of whom are familiar with the scope and value of these principles, which historians and economists in general have so imperfectly appreciated, and have doubtless often wished that they could find a way across all barriers of technicality and professionalism into their proper place in the general intelligence of mankind.

Mr. George King (Great Britain):—

I have a certain delicacy, Mr. President, in speaking, from a kind of a double official position. In the first place, the Institute of Actuaries has honored me with an official post in that body, and in the second place I have been honored by being asked to deliver lectures for the London University at the School of Economics. So that in two ways I am personally involved.

In London, so far as actuarial matters are concerned, instruction is covered by the Institute of Actuaries itself. The Institute for many years has devoted itself to examining students and for a great many years past it has had classes for those students and appointed skilled men to lecture and to set papers in the principles and practices of actuarial science.

In Edinburgh the case is not quite the same. There they have no official classes, but the Faculty of Actuaries has been for many years an examining body and there are many Fellows of the Faculty in Edinburgh who devote themselves to training the younger men.

A difficulty thus arises in the United Kingdom of bringing this subject into the university curriculum. The London University has arranged that actuarial science shall be one of the optional subjects for the degree of Bachelor of Science, and that being so they have deputed to the School of Economics the duty of giving lectures on the subject. But so far we are in a nebulous state, we are feeling our way. Last winter I delivered one course of lectures and Mr. Young another. It will be sometime yet before examinations are held in the London University in connection with actuarial matters, and we do not know who will be the examiners, or what kind of questions they will set. They tell us that they will probably come to the Institute of Actuaries to name the examiners.

Now, the difficulty in my mind is this, that it is impossible to give the students of the School of Economics the thorough training necessary for the profession of an actuary. We moreover are in this further difficulty, that although the profession of actuary is legally recognized in the United Kingdom in the Assurance Companies Acts and certain returns have to be made by the actuary, as in the Friendly Societies Act, it is nowhere stated what an actuary is, and the profession of actuary is not protected like that of the doctor or the lawyer. Anyone in England can call himself an actuary, and there is, therefore, a risk involved in these university courses of candidates passing examinations for a university degree, taking this as one of the optional subjects and then posing as actuaries without anything like a sufficient training.

So far I have confined myself in the lectures to general principles, indicating to the students where they might find the details which they will require to master before they can successfully practice as actuaries, and I have referred those who wish to pursue the subject professionally to the Institute of Actuaries. My wish is to strengthen the Institute in this direction, and, although I cannot speak officially either for the Institute or for the School of Economics, my feeling is that it would be better not to have separate lectures by the School of Economics, but in some way or other to affiliate the Institute of Actuaries with the London University. If that could be done, I think a very great step would have been taken.

We want general information diffused regarding life assurance, but we must not allow that to take the place of the strict scientific training which is absolutely necessary for the practice of the profession of actuary.

Dr. Alfred Manes (Germany):—

In Germany we have no special division of actuarial science but every branch and division of insurance is comprised in this term. Certainly life insurance is paramount, because it is the main and the most important division. But there are also other branches of insurance which are equally important for the welfare of the nation, and I do not think it right to overlook them.

We have in Germany one university in which is included, since 1895, a Royal High School of Insurance Science. It is the University

of Göttingen, and at this High School in Göttingen there are many foreigners who study insurance science in its German signification.

In this school at Göttingen there are taught economics, statistics, law, mathematics of insurance and some other branches. The course covers a period of two years. There are two examinations which must be passed, the one in mathematics, what one may call the actuarial examination, and the other in law, economic science and statistics. The candidate who passes these examinations receives a diploma from the State with the designation of *Staatlich geprüfter Versicherungs-Verständiger,* State License Insurance Expert. There are no private examinations. There is no actuarial institution in Germany as in England and in Scotland.

In the cities of Frankfort, Cologne, Leipzig, there are commercial high schools, in which there are professors of insurance science. They teach not only the mathematics of insurance, but also the law and economics of life insurance, and all other branches of the subject, including the history and practice of insurance in foreign countries as well as in Germany.

I think that this aspect of the question is worthy the attention of people of other countries. We are just developing it, but I think the science of insurance in this sense is of sufficient importance to be included in the course of every student of law, economics or applied mathematics.

Prof. James H. Gore (United States) :—

I feel constrained to make one or two remarks partly in acknowledgment of an influence that has been unwittingly exerted upon me by the very illustrious example of Mr. Lewis. Whether his influence has been at work or not, I wish to say that I have been following somewhat in his footsteps—very far after, it is true—but nevertheless following the idea that Mr. Lewis had in preparing his lectures to which he has referred.

As head of the Department of Pure Mathematics in the Columbian University I have endeavored at all times to do what I could to deprive the subject of the accusation that pure mathematics is of no use to anyone. At every point I have tried to find a practical application to add to its zest and to broaden out its usefulness. In the subject of probabilities there was an excellent opportunity to discuss the fundamental principles of the science that is of interest to you. I freely admit that my purpose was not to educate actuaries, not to induce young men to become actuaries, but to treat this subject from a purely economic standpoint. We can recall, many of us, how that twenty years ago the visit of a life insurance agent was in the minds of many second only to the visitation of an epidemic.

It has been necessary to correct this impression to some extent. It is necessary that our people should realize that when they are taking out an insurance policy, they are simply laying aside a savings fund. It is nothing more than a compulsory savings bank with the purchase of indemnity added to it.

It is with this idea in view that I have branched off at the subject of probabilities, to try to impress upon the young men who come under my care the importance of taking up seriously the question of insurance solely as an economic proposition.

MR. RALPH P. HARDY (Great Britain):—

I am sure my friends will admit that I am one of the last persons to discourage study or to fail to put its proper value on all intellectual pursuits. I am, therefore, very largely on the same platform as Mr. Lewis, but at the same time, I ask you to allow me respectfully to put in my own protest against this entire suggestion that actuarial matters should be necessarily made the subject of university study. No doubt the student would grow, absorb wisdom, and his interest in this economic question would be broadened; no doubt it would exercise great influence over his own affairs; but we must remember that the affairs of this world not only are, but are intended to be, administered by ordinary men, and not by intellectual giants. Whatever therefore is necessary to the administration of the affairs of mankind must be simple in its conception and easy in its daily work. In university instruction we want a fuller understanding and grasp of the trend and meaning of certain fundamental principles. We do not want a superstitious reliance upon mere formulae. We want a better knowledge of the destination to which a few simple elementary principles, if employed, will ultimately carry us.

Upon reviewing the whole matter I am not in favor of departing from the system at present in vogue in England, which has been most successful in its training of that judicious and rare combination, a patient and practical mind, and that is because of the constant drill in the mechanical portion of our business, which has kept the men close to practical realities, not allowing them to lose themselves in a maze of high flown mathematical principles.

MR. ARTHUR GUNCKEL (Germany):—

Ich wollte nur in kurzen Worten einem Satz in den uns gedruckt vorliegenden Ausfuehrungen unseres Herrn Referenten entgegentreten, welcher sich auf Seite 6 seiner Arbeit befindet und folgendermassen lautet:

"Die Gesellschaften standen der Errichtung des Versicherungs-Seminares in Goettingen nicht nur fern, sondern grossenteils sogar feindlich gegenueber. Und es ist mit lebhaftem Bedauern zu konstatieren, dass auch noch heute viele Gesellschafts-Direktionen dem Seminar mit Misstrauen begegnen."

Sie haben bereits von anderen der Herren Vorredner gehoert, dass dieses sogenannte Misstrauen sich nicht auf deutsche Versicherungsmaenner beschraenkt. Einer der Herren ist sogar so weit gegangen, zu sagen, eine bestimmte wissenschaftliche Bildung waere fuer Versicherungsmaenner ueberhaupt nicht noetig. Das ist entschieden zu weit gegangen. Ich glaube auch, dass eine gewisse wissenschaftliche Vorbildung da sein muss, und

I only wish to object, in a few words, to a sentence in the statements of Dr. Manes, which is to be found on page 6 of his paper and reads as follows:

"The Companies assumed not only a distant but, for the most part, even a hostile attitude towards the establishment of the Insurance Seminary at Goettingen. And it must be stated with intense regret, that the governing boards of many companies treat the Seminary with distrust to this day."

You have already heard from other speakers that this so-called distrust is not confined to German insurance men. One of the gentlemen even went so far as to say that a definite scientific education was altogether unnecessary for insurance men. That is decidedly going too far. I believe that there should be a certain scientific preparation and my protest against the above-mentioned sentence in Dr. Manes' paper is aimed in another direction. The Insurance Seminary at Goettingen divides its pupils into two classes, a legal-adminis-

meine Verwahrung gegen den obigen Satz in der Arbeit des Herrn Dr. Manes geht nach einer anderen Richtung. Das Goettinger Versicherungs-Seminar teilt seine Zuhoerer in zwei Klassen, eine juristisch-administrative und eine mathematische, und hat in beiden Klassen ordentliche und ausserordentliche Mitglieder. Erstere sind immatrikulierte Studenten welche mindestens zwei Semester studiert oder *nach Ansicht des Direktors des Seminars* eine entsprechende Vorbildung haben; waehrend ueber die Qualifikation der ausserordentlichen Mitglieder nichts verlautet. Wenn hier betreffs der Vorbildung der ordentlichen Mitglieder des Goettinger Versicherungs-Seminares zwecks ihrer Aufnahme nicht lediglich die Ansicht des Direktors dieses Seminares massgebend waere, sondern wenn eine Bestimmung hierueber des Inhalts eingeschaltet wuerde, dass als Mitglieder solche jungen Leute zuzulassen seien, welche sich bei ihrer Meldung fuer das Seminar durch Zeugnisse praktischer Versicherungsmaenner darueber ausweisen, dass sie sich *in der Praxis* eine genuegende Vorbildung angeeignet haben,—so wuerden wir recht wohl zufrieden sein, und die ganze Abneigung der Maenner der Praxis gegen die auf dem Goettinger Versicherungs-Seminar vorgebildeten Leute wuerde wegfallen. Wie es heute steht, schafft das Seminar,—abgesehen von einzelnen, ganz besonders veranlagten Naturen,—doch schliesslich eine Menge von geistigem Proletariat, welches sich, gestuetzt auf das Diplom des Seminars, welches sie zu Versicherungsverstaendigen stempelt, nach seinem Eintritt in die Praxis weit mehr zu wissen einbildet als die im Dienst der Praxis ergrauten Direktoren, etc.

Dem muss entgegengetreten werden, und ein erfreuliches Resultat ist meines Erachtens nur dann zu erreichen, wenn den in das Seminar eintretenden jungen Leuten zur Pflicht und Aufnahmebedingung gemacht wird, dass sie einen mindestens zweijaehrigen Kursus in der Praxis durchgemacht haben und ein autoritatives Zeugniss ueber den Erfolg dieses praktischen Kursus bei ihrer

trative and a mathematical class, and has in both classes regular and non-regular members. The former are matriculated students who have studied at least for two semesters or have, *in the judgment of the director of the Seminary*, an adequate preparatory knowledge, while as to the qualifications of the non-regular members nothing is stated. If with regard to the preparatory training of the regular members of the Goettingen Insurance Seminary the judgment of the director of that Seminary were not exclusively decisive, for the purpose of their admission, but if a stipulation were to be inserted to the effect that such young men are to be admitted as members, as prove on their application for entrance to the seminary, through testimonials from practical insurance men, that they have acquired sufficient preparatory knowledge *practically*, we should be well satisfied and the whole disaffection of the practical men towards the people prepared at the Goettingen Insurance-Seminary would disappear. As it is, the Seminary, apart from a few particularly gifted individuals, produces after all a mere intellectual proletariat, who, backed by the diploma of the Seminary certifying them as insurance experts, after their entrance into practical work fancy themselves to know much more than directors grown gray in the service.

This must be obviated, and a satisfactory result is, in my opinion, to be attained only by making it, for the young men entering the Seminary, a condition of admittance that they shall have gone through a practical course of at least two years and, on their application for admittance to the Insurance Seminary, submit an authoritative testimonial as to the success of this practical course. Then they will approach their theoretical studies with an entirely different view from at present, when most of them have not the remotest conception of things practical, and they will not, on re-entering the service, imagine that they have already learned everything they need. As for the rest, I question if the Goettingen Insurance Seminary will ever succeed in getting

Meldung zum Versicherungs-Seminar vorlegen. Dann werden sie mit ganz anderen Augen an das theoretische Studium herantreten als jetzt, wo sie meistens von der Praxis noch gar keine Ahnung haben,—und sie werden dann bei Ihrem Wiedereintritt in die Praxis nicht meinen, dass sie bereits alles gelernt haetten, was sie brauchen.

Im uebrigen bestreite ich, dass das Goettinger Versicherungs-Seminar es jemals erreichen wird, dass die deutschen Versicherungsgesellschaften die in ihm theoretisch vorgebildeten Leute ohne weiteres auf Grund ihrer Diplome als Versicherungsverstaendige, als Versicherungsmaenner uebernehmen werden: ueberall wird man von ihnen verlangen, dass sie sich erst noch praktisch betaetigen und praktische Assekuranzbeamte werden, ehe man ihnen verantwortliche Stellungen eroeffnet.

the German insurance companies to employ as insurance men the people theoretically prepared there, without any further testimony than their diplomas as insurance experts for a basis; everywhere it will be required of them that they first stand the practical test and become practical insurance employees before responsible positions are opened to them.

Dr. Alfred Manes (Germany):—

Ich moechte Herrn Direktor Gunckel mein allergroesstes Bedauern darueber aussprechen, dass er eine rein interne Frage hier auf dem Congress zur Sprache gebracht hat;—und moechte sachlich erwiedern, dass niemals auch nur im entferntesten daran gedacht worden ist, dass junge Leute, welche auf diesem Seminar gebildet worden sind, sofort als vollstaendig fertig in's Leben treten sollten und gegen Gehalt in den Dienst der Versicherungsgesellschaften fuer die hoeheren Beamtenstellungen aufzunehmen waeren. Die Absicht ist vielmehr von jeher einzig und allein die gewesen, junge Leute mit voller theoretischer Vorbildung zu schaffen, welche in der Praxis von unten anzufangen haben, und auf Grund ihrer theoretischen Vorbildung sich erst praktische Erfahrung erwerben muessen.

I would like to express to Director Gunckel my profoundest regret at his having made this purely internal question a subject of discussion here at the Congress, and to the point at issue would reply, that it has never been, even remotely, expected that young men educated at that Seminary should immediately enter active life as fully prepared and be appointed to the higher positions in the service of the insurance companies. The intention has, on the contrary, been all along, purely and simply, to turn out young men thoroughly prepared theoretically, who must begin their practice at the foot of the ladder and first acquire practical experience on the basis of their theoretical preparation.

Mr. James M. Craig (United States):—

I wish to say a word in confirmation of what Mr. Hardy has said. The company with which I am connected organized a class for the study of actuarial science some six or seven years ago, designed especially for the young men who were engaged in the actuarial division, although not limited to them, and open to any of the young men in the office who had aspirations to learn actuarial science. Quite a number of young

men, not employed in the actuarial division, but who were ambitious, took advantage of that opportunity and became members of the class. But every one of this latter group dropped out some time or other because the theory and the practice were not united.

Mr. John K. Gore (United States) :—

Mr. De Boer in his very interesting paper on instruction on actuarial subjects in our American Universities and Colleges refers to the course of instruction at Yale University and quotes from the *Weekly Underwriter* in part as follows, referring to the course:

"The course is provided for such students as desire to add a theoretical knowledge of insurance to their other acquirements, either with a view of widening their education or entering the business of insurance as a vocation."

That statement is likely to be somewhat misleading in regard to Yale University. The course is put under the supervision of four officers of insurance companies. Three of them are officers of life companies and one of a fire company. Three of them are university graduates. The course is not to teach a young man to become an actuary or a life insurance solicitor, but the keynote of the course is that it is a branch of the department of economics; it is to develop and extend the idea of the great importance of life insurance as a direct fundamental part of our social structure of to-day.

There will be two lectures devoted to the theory of life insurance. About half of the lectures will be devoted to life insurance, history, plans, etc. Fire insurance will be treated in six or seven lectures. The other branches of insurance will be treated in succession, and all of them intended to develop the economic side of the business and to bring into prominence life, fire and other kinds of insurance as an important part of our social life.

Mr. T. B. Macaulay (Canada) :—

I would like to take this opportunity, as a Canadian, to express, in behalf of our Canadian actuarial body, the sense of deep obligation which we in Canada—and I have no doubt what I say of Canada is true of all the Colonies—owe to the Institute of Actuaries for establishing in our midst centres for its examinations. As is probably known there are now in Canada three centres at which persons can write upon the examinations of the Institute of Actuaries—Toronto, Ottawa and Montreal. When these examinations were established they at once gave a tremendous stimulus to actuarial studies, and numbers of young men in our offices, especially in the actuarial departments, who had up to that time been content with their routine work, immediately began to study and to make up their minds to master the entire subject, and that tendency has been felt in ever increasing force since then.

These young men are coming to the front and have a future before them, and this fact is due largely to the Institute of Actuaries of Great Britain.

Mr. Henry Moir (United States) :—

One or two of the speakers and writers in discussing this subject, especially from the point of view as to whether or not University educa-

tion is desirable, have approached the subject from slightly different aspects. Some have taken the strict meaning of the term, Actuarial Subjects, and the practical influence on those who study on that line will be to become actuaries; the others look on the problem as a general question of insurance from the sociological and economic standpoint. There is really much more unanimity in this body on this general question than what would appear from what has been said and written. I think we are practically unanimous on the general question that the more the general principles of life insurance can be forced upon the attention of the people, the more good will be done. From that point of view there can be no doubt that it is desirable to have just that done.

On the other hand, when we come to the consideration of technical actuarial subjects, there is more doubt as to the course to be pursued, but I think that Prof. Gore gave us the solution as to the direction to be followed. Actuarial science can be used in such a way as to illustrate generally the application of higher mathematics, and to that extent no one would ever go out with the idea that a University course of that kind would make men actuaries in a strict and professional sense.

MR. ARTHUR GUNCKEL (Germany) :—

Ich will nur eine kleine Richtigstellung bewirken gegenueber einem mir gemachten Vorwurf. Das was ich habe aussprechen wollen, geht nicht gegen die Schueler des Seminares, dahin etwa, dass sie sich fuer ausgebildet halten und der praktischen Erfahrungen dagegen nicht mehr zu beduerfen glauben. Mein Vorwurf richtet sich gegen die Art der Errichtung des Versicherungs-Seminares. Wir haben soeben von Herrn Macaulay gehoert, wie auf Betreiben des "Institute of Actuaries" Lehrstuehle in dem Sinne und nach Art der britischen errichtet worden sind, und wie die Actuaries mit dieser Einrichtung zufrieden sind. Da haben Sie den richtigen Weg wie Lehrstuehle der Versicherungswissenschaft errichtet werden sollen. Sie haben gehoert, die englischen Aktuare haben sich dahinter gesetzt und haben das, was sie gelehrt haben wollen, fixiert und ihr Gewicht in die Wagschale geworfen bei der Festsetzung der Universitaetskurse. Wir haben in Deutschland ebensogut eine Corporation gehabt, naemlich den Verein deutscher Lebens-Versicherungsgesellschaften; aber niemand hat uns gefragt, was wir fuer zweckmaessig hielten. Und natuerlich, wenn solche Institutionen errichtet werden ohne die Praxis zu fragen,—da fehlt auch dann die richtige Ausfuehrung.

Das wollte ich richtig stellen und

I only wish to clear up a little misunderstanding, for which I have been criticised. What I intended to convey was not directed against the pupils of the Seminary, as if they considered their education finished and themselves no longer in need of practical experience. My protest is aimed at the method of establishing the Insurance Seminary. We have just been informed by Mr. Macaulay how, upon the instance of the Institute of Actuaries, examinations were established in the sense and after the model of the British, and how pleased the actuaries are with this method. There you have the right way as to how chairs for insurance science should be established. You have heard that the English actuaries went to work and decided what they desired to be taught, and threw their weight into the balance in settling the University courses. We had an institution as well in Germany, namely, the Society of German Life Insurance Companies, but nobody asked us what we considered expedient. And naturally, if such institutions are established without consulting the practical side, the proper carrying out is also not attained.

This I wished to confirm and at the same time to point out that the gratitude of the Canadian Actuaries, for the foundation of such institutions after the

dabei nur noch anfuehren, dass gerade die Dankbarkeit der canadischen "Actuaries" dafuer dass solche Anstalten nach britischem Muster gegruendet worden sind, deutlich zeigt, dass es sehr wohl moeglich und von ganz besonderem Nutzen ist, wenn vor Errichtung derartiger Institute die Praxis gehoert wird.

British model, shows plainly that it is quite possible and exceedingly useful to regard practical experience in this matter before establishing institutions of this kind.

MR. HERBERT N. SHEPPARD (United States):—

It seems to me unreasonable to expect that the average intelligent business man, when he takes up the annual report of an insurance company, should be expected to understand how certain items have been obtained. Especially is this true of the items that are the peculiar care of the actuarial department, for instance, the item of reserves. None of those items can possibly be understood by anyone who has not at least some knowledge of the subject, and for that reason I think it would be well that the fundamentals of the science should be taught, just as the fundamentals of any other branch of science or of applied statistics are included in the course of a liberal education.

This does not mean that every man should become an actuary, but in view of the extraordinary ideas that are prevalent on this subject it seems well that certain actuarial ideas and elements should generally be made known. This is best done by the universities.

PROF. JAMES W. GLOVER (United States):—

In view of the fact that Mr. De Boer has spoken of the University of Michigan in these words, "So far as I have been able to learn and can judge the matter from information supplied by the universities and colleges direct, no institution has apparently adopted and applied better arranged courses of instruction in the direction of actuarial subjects than the University of Michigan," I think a few words of explanation of the policy of our University may be of interest.

It seems that we here are in accord with one another that the college should give instruction on insurance considered as a general subject. There is no doubt but that the humanitarian concept of insurance as spoken of by Mr. Lewis is of the highest value, and needs no further argument. But, passing from that to the purely theoretical side of actuarial science, I wish to say that in my opinion actuarial science, as such, must be found in the domain of mathematics and be finally developed by mathematicians. The fact that the names of great mathematicians in the past and present have been identified with actuarial theories is sufficient proof of that. As to the teaching of actuarial science in the universities, there can be no question but that the subject should be taught and developed to an extent entirely beyond what any actuary will use in his every day practice.

The university is the nursery of theory. The business world is where theory is applied in a rough and ready way. Most practicing actuaries have not time to develop the fine points of actuarial theory. The natural course is to look, I should judge, to the great universities and the mathematicians there who will eventually find themselves taking up this branch of applied mathematics.

The University of Michigan has become interested in this subject

by observing that the great German universities are doing the work of which I speak. I agree in every way with Dr. Manes in his high estimate of the work done by these universities, and especially at Göttingen. We all know that the theory of co-variants is of no use in practical matters. It is discussed in our universities. The theory of functions may not be applied practically, nevertheless, it is taught in our universities.

Mr. Joseph Burn (Great Britain) :—

In London, although we believe that an actuary should be a mathematician, we also believe that he should be much more than that. One of the difficulties which is found in supplying the necessary education at a university, is that an actuary's knowledge must be of the constantly growing kind. I believe that some of our examiners in the Institute of Actuaries have complained that the papers which have been sent in by the students have been lacking in practical knowledge, and that the great difficulty of students lies in gaining that practical knowledge. An actuary who has passed his examinations has by no means finished his education.

Subject, *The Protection of Wives and Children against Claims of Creditors.*

Papers.

The Protection of Life Policies against the Claims of Creditors, by Mr. Duckworth of Australia.

Existing Legislation for the Protection of Wives and Children, as Life Insurance Beneficiaries, against the Claims of Creditors, by Mr. Goldman of Canada.

Note sur les dispositions de la législature française relatives à l'assurance sur la vie au profit de la femme et des enfants, by Mr. Cosmao-Dumanoir of France.

Des lois actuellement en vigueur pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance sur la vie, contre les réclamations des créanciers, by Mr. Lefort of France.

Schutz der Frauen und Kinder als begünstigte Personen in der Lebensversicherungs-Police, by Mr. Moldenhauer of Germany.

On existing Legislation for the Protection of Wives and Children, as Life Assurance Beneficiaries, against the Claims of Creditors, by Mr. Phelps of Great Britain.

Ueber die Rechte der begünstigten Frau und Kinder aus der Lebensversicherungs-Police, speziell den Gläubigern des Kontrahenten gegenüber, by Mr. J. van Schevichaven of Holland.

Lois actuellement en vigueur en Espagne pour la protection des épouses et des enfants, en tant que bénéficiaires de l'assurance-vie, contre les réclamations des créanciers, by Mr. Maluquer y Salvador of Spain.

Laws Protecting Life Insurance against Creditors, by Mr. Lewis of the United States.

Mr. Arthur F. Burridge (Great Britain) :—

Many men when they come to effect policies on their lives, at all events, in Great Britain, desire to obtain the protection from their creditors which is afforded by the Acts of Parliament dealt with in the paper of Mr. Phelps. But they forget that in so doing they part with a certain

liberty of action in regard to future dealings with their policies. It is a truism of social economy, and a necessity of civilized life, that we shall, all of us, be willing to part with a small portion of our liberty in order to secure the far greater portion of it, and the portion of control over their policies, which Englishmen are called upon to surrender when they obtain the protection of the Married Women's Property Act, is that under certain conditions they are not so free to deal with those policies by way of surrender to the companies, by way of loans or by way of obtaining the cash value of the declared bonuses.

The legal decisions on this question in England have not been numerous. The Courts of Justice have not been called upon to declare how far a man's control is limited, except in a few cases, and for the most part in those cases in which a question has arisen as to how the administration of the fund shall be made after the policy may have matured, that is, may have become a claim by death. As far as I am able to understand, in the absence, as I have said, of legal decisions, if a policy be effected on the life of the husband for the benefit of the wife alone, dealings with that policy may be allowed to a very full extent, upon the signature of both the husband and the wife; but if the policy should be affected on the life of the husband for the benefit of the wife and her children, the power of action is modified and restricted, because if the children are not of age it is absolutely impossible that dealings with the policy can be permitted. If, however, all the children are of age, and if there is no possibility by reason of the ages of the parties, that there should be further beneficiaries, then surrender of the policy may be allowed by signature of all parties. And thirdly, if the policy shall be on the life of the husband for the benefit of the children only, it is obvious that no dealings can be affected with the policy during the life of the insured.

Therefore it comes to this that if all the beneficiaries under a policy are of age and give their consent to any dealings with the policy, then such dealings may, in my judgment at all events, safely take effect; but if, on the contrary, there should be and beneficiary under age, or if there should be the possibility of a further number of persons involuntarily becoming interested in that policy, then it can be by no means allowed that dealings with the policy shall take place. The general character of legislation in our country, the legislation of 1870 and 1882, referred to by Mr. Phelps, for the benefit of the wife, as apart from the creditors of the husband, has undoubtedly exercised a very beneficial and very protectice influence over those tender portions of the community who most require it, namely, the wife and children. In the particular case, to which we from the standpoint of creditors are directed, it has been something of a disappointment.

Mr. Albrecht Gerkrath (Germany) :—

Wir haben Ihnen betreffs des in Deutschland ueber diese Frage geltenden oder anzustrebenden Rechtes ein kleines Referat vorgelegt aus der Feder des Herrn Dr. jur. Paul Moldenhauer, Dozenten an der Handels-Hochschule zu Coeln. Da nun Herr Dr. Moldenhauer verhindert ist, auf dem Congress persoenlich zu erscheinen, so habe ich es

We have submitted to you a short report from the pen of Dr. Paul Moldenhauer, docent at the Commercial Academy in Cologne, on the law obtaining or to be sought after in Germany with regard to this question. As Dr. Moldenhauer is prevented from appearing at the Congress, I have undertaken to introduce his report.

uebernommen, das Referat bei Ihnen einzufuehren.

Der Bericht eroertert hauptsaechlich die Art wie die bei dieser Frage des Schutzes der Frauen und Kinder als beguenstigte Personen moeglichen verschiedenen Faelle in Deutschland nach deutschem Recht zu entscheiden sind, und macht zum Schluss einige Vorschlaege zur eventuellen Ergänzung des soeben als Entwurf veroeffentlichten deutschen Reichsgesetzes ueber den Versicherungsvertrag.

Der eine Vorschlag deckt sich mit der auch in dem Schweizer Entwurf eines Gesetzes ueber den Versicherungsvertrag enthaltenen Bestimmung, dass der Ehegatte und die Kinder des Schuldners mit dessen Zustimmung verlangen koennen, dass ihnen der Versicherungsanspruch gegen Erstattung des Rueckkaufpreises dann uebertragen werde, wenn der Versicherte in Konkurs geraten ist so lange die zu Gunsten der Frau und Kinder abgeschlossene Versicherung noch in Kraft ist, d. h. also waehrend der Versicherte noch am Leben ist.

Der andere Vorschlag, den Dr. Moldenhauer macht, geht dahin, dass bei Ergreifen einer Police seitens der Glaeubiger des Versicherten nach dem Tode desselben eine Vereinbarung zwischen der Familie des Versicherten und seinen Glaeubigern dahin gehend stattfinden solle, dass die Police den Beguenstigten gegen Zahlung derjenigen Summe ueberlassen werde, welche der Versicherer als Rueckkaufpreis im Augenblick des Todes des Versicherten gezahlt haben wuerde.

Ich moechte alsbald die Bemerkung machen, dass ich mich mit den eben erwaehnten Vorschlaegen der Herrn Dr. Moldenhauer nicht eingehend befassen kann, da die Frage, wie derartige Rechtsverhaeltnisse zu regeln sind, keine Frage des Versicherungsrechtes, sondern vielmehr des allgemeinen Rechtes ist. Freilich gehoert es auch zu den Aufgaben und Pflichten des Versicherungsmannes dem Juristen in den Fragen ausserhalb des eigentlichen Versicherungsrechtes durch geeignete Vorschlaege neue Wege zu weisen; aber vorliegendes Falls meine

The report treats chiefly of the manner in which the cases possible in connection with this question of Protection of Wives and Children as Beneficiaries are to be decided in Germany according to German law, and in conclusion makes a few suggestions for the eventual supplement to the German Imperial law on the insurance contract, the draught of which has just been published.

One of the suggestions coincides with the provision, contained also in the draught of a Swiss law on the insurance contract, that the wife and the children of the debtor, with the latter's consent, may demand that the insurance be transferred to them on payment of the repurchase price in case the insured has become insolvent, as long as the insurance effected in favor of wife and children is still valid, that is, during the life-time of the insured.

The other suggestion made by Dr. Moldenhauer is to the effect that, upon the attachment of a policy by the creditors of the insured after the latter's death, an agreement be made between the family of the insured and his creditors to the end that the policy be given up to the beneficiaries on payment of the sum which the insurer would have paid as repurchase price at the time of death of the insured.

I would forthwith remark that I cannot deal exhaustively with the above mentioned suggestions of Dr. Moldenhauer, as the question how such legal relations are to be regulated is not a question of insurance law but rather of common law. To be sure, it is part of the insurer's province and duty, to point out new aspects to the jurist, by suitable proposals, in questions lying outside the insurance law proper; but in regard to the present case I do not think that Dr. Moldenhauer's last proposition will cover all contingencies. We need only consider that a life insurance policy can quite well be conceived of as having no repurchase price and that the amount of insurance is a matter entirely independent of the amount of the repurchase price. We must, therefore, come to the conclusion that from the

ich nicht, dass der letzte Vorschlag des Herrn Dr. Moldenhauer alle Eventualitaeten decken wird. Wir brauchen nur zu beruecksichtigen, dass eine Lebensversicherungspolice sich doch auch ohne Rueckkaufpreis denken laesst, und dass die Versicherungssumme eine von der Hoehe des Rueckkaufpreises ganz unabhaengige Sache ist. Da muessen wir zu dem Schluss kommen, dass aus der Natur des Versicherungsvertrags keinerlei Recht hergeleitet werden kann, den Glaeubigern des Versicherten einen Anspruch zuzuweisen.

Der erste Vorschlag, den Herr Dr. Moldenhauer macht, scheint mir da, wo sich ein Rueckkaufpreis ergibt, der ohne Schaedigung der Gesellschaft jederzeit gewaehrt werden kann,—ein ausserordentlich zweckmaessiger zu sein.

nature of the insurance contract no right of any sort can be asserted to assign a claim to the creditors of the insured. The first proposition made by Dr. Moldenhauer seems to me extremely appropriate, in cases where a repurchase price is stated, which can always be granted without detriment to the company.

Mr. Theodor Walther (Germany):—

Im Anschluss an die Ausfuehrungen des Herrn Vorredners moechte ich noch einmal dem Gedanken Ausdruck geben, dass es in Deutschland einer besonderen gesetzlichen Regelung der Frage, wie die Rechte der Frauen und Kinder an Lebensversicherungspolicen den Eingriffen der Glaeubiger des Versicherten gegenueber zu schuetzen sind,—nicht bedarf; wie denn auch der vorliegende Entwurf des Gesetzes ueber den Versicherungsvertrag diese Frage ueberhaupt nicht beruecksichtigt, sondern die Regelung derselben den allgemeinen gesetzlichen Bestimmungen ueberlaesst.

Die Bestimmungen des im vorigen Jahr in Kraft getretenen buergerlichen Gesetzbuches genuegen vollkommen. Nach §328 ff. des buergerlichen Gesetzbuches haengt es bei der Beurteilung eines Vertrags ueber eine Leistung an einen Dritten von dem ausdruecklich vereinbarten oder aus den Umstaenden erkennbaren Willen der Parteien ab, ob der beguenstigte Dritte ein unmittelbares oder ein mittelbares, ein sofortiges oder ein erst spaeter eintretendes, ein unwiderrufliches oder ein widerrufliches Recht erhaelt. Hinsichtlich der Lebensversicherung aber gibt das Gesetz eine voellig ausreichende

In connection with the remarks of the last speaker I would like to give expression, once more, to the idea that there is no necessity in Germany for a special legal regulation of the question as to how the rights of wives and children to life insurance policies are to be protected against the claim of creditors of the insured; nor does the present draught of the law on the insurance contract consider this question at all, but leaves its regulation to the provisions of the common law.

The provisions of the code of civil law enacted last year are perfectly sufficient. According to Paragraph 328 et seq. of the code of civil law, in judging of a contract regarding a payment to a third party, it depends on the will of the parties expressly agreed upon or ascertainable by the circumstances, whether the favored third party acquires an indirect or direct, an immediate or contingent, an irrevocable or revocable claim. With regard to life-insurance, however, the law affords a thoroughly sufficient rule, to the effect that in case of doubt, that is in the absence of a clearly ascertainable agreement, the contract is to be judged according to the general insurance pro-

Regel dahin, dass im Zweifel, d. h. bei dem Mangel eines deutlich erkennbaren Willens, der Vertrag nach Massgabe der allgemeinen Versicherungsbedingungen zu beurteilen ist. Der Versicherte hat es hiernach vollkommen in seiner Hand, welche Rechte er seiner Frau und seinen Kindern, zu deren Gunsten er die Police ausstellen laesst, einraeumen will.

Nach meinen Erfahrungen nimmt der Versicherte in den meisten Faellen diesen Fragen gegenueber keine bestimmte Stellung ein. Die Regel ist, dass er, so lange er sich in guenstigen Vermoegensverhaeltnissen befindet, die freie Verfuegung ueber die Police behalten will: er will sie beliebig abaendern, abtreten und in seinem Geschaeftsinteresse verpfaenden koennen; nur dann erst, wenn er in finanzielle Schwierigkeiten kommt, wenn die Zwangsvollstreckung durch einen Glaeubiger, oder wenn die Konkurseroeffnung droht, dann soll die Police auf einmal ein Vermoegensstueck seiner Frau sein. Das laesst sich schwer vereinigen, und nun entstehen alle die verschiedenen Zweifelsfragen, deren Entscheidung oft in diametral entgegengesetztem Sinne erfolgen kann. Um hierin reine Bahn zu schaffen, ist meines Erachtens anzustreben, dass, wer eine Versicherung zu Gunsten Dritter Personen herausnimmt, sofort bei Abschluss der Versicherung seine Absicht voll zu erkennen gibt und klar zum Ausdruck bringt, welche Rechte er den beguenstigten Personen einraeumen will, ob diese ein sofortiges und unwiderrufliches Recht an der Versicherung enthalten sollen, und ob somit diese Versicherung dem Zugreifen seiner Glaeubiger entzogen werden soll. Am allerbesten ist dies aber zu erreichen, wenn die Versicherungsgesellschaften den Versicherungsnehmer zwingen, sofort zu dieser Frage feste Stellung zu nehmen, z. B. wenn die allgemeinen Versicherungsbedingungen dahin gehen, dass es in das Belieben des Versicherungsnehmers gestellt bleibt, ob die Dritten Personen einzuraeumenden Rechte erst nach dem Ableben des Versicherten beginnen (und somit bei dessen Lebzeiten die Police sein volles Eigentum verbleibt), oder ob die Police

visions. It rests, therefore, entirely with the insured as to what rights he is willing to concede to his wife and children, in whose favor he causes the policy to be made out.

According to my experience the insured assumes in most cases no definite position on this question. The rule is that, as long as he is in satisfactory circumstances, he wishes to retain the free disposition of his policy; he wants to be able to alter it at his will, to transfer it and to pledge it for his business interests; only when he gets into financial difficulties, when execution by a creditor, or when insolvency is imminent, then the policy is all at once to become a part of his wife's property. It is difficult to reconcile these things and hence arise all the various doubtful questions, which may often be decided in senses diametrically opposed to one another. To institute a proper course in this respect, an effort should in my opinion be made to have any one, who takes out an insurance in favor of a third party, make his intention fully known on effecting the insurance, and declare plainly what rights he is willing to concede to the beneficiaries, whether these are to acquire an immediate and irrevocable claim to the insurance and whether, therefore, the insurance should be free from the claims of his creditors. The best way to attain this end is for the insurance companies to compel the policy-holder to take at once his position regarding this question; for instance, if the general insurance provisions are to the effect that it rests with the policy-holder whether the claims to be conceded to a third party are to begin only after the death of the insured (and consequently the policy remains his exclusive property during his lifetime), or whether the right of disposal of the policy is to devolve at once on the third party, the policy-holder must make up his mind on effecting contract what course is to be pursued in regard to the policy. In most cases he will probably have the policy made out so that his wife (or his children) acquire an immediate, irrevocable right, and it is earnestly to be desired

sofort in das Verfuegungsrecht der Dritten Personen uebergeht,—so muss sich eben der Versicherungsnehmer beim Abschluss des Lebensversicherungsvertrages darueber schluessig machen, wie es mit der Police gehalten werden soll. In den meisten Faellen wird er wohl die Police so ausstellen lassen, dass seine Frau (oder seine Kinder) ein sofortiges, unwiderrufliches Recht erhalten,—und es ist dringend zu wuenschen, dass dies stets geschieht. Denn die Versicherung soll doch die Familie gegenueber allen Wechselfaellen des menschlichen Lebens sicherstellen,—das ist die Hauptaufgabe der Lebensversicherung. Die Erreichung dieses Zweckes wird aber in Frage gestellt, wenn die Versicherung bei Lebzeiten des Versicherten den Angriffen der Glaeubiger unterliegt, oder ohne weiteres abtretbar, verpfaendbar, u. s. w. bleibt.

Ich moechte also meinen Standpunkt dahin praezisieren, dass die hier vorliegende Frage nicht durch Gesetz geregelt werden soll, sondern vielmehr durch die Versicherungsgesellschaften selbst durch die allgemeinen Versicherungsbedingungen.

that this should always be done. For the insurance should secure the family against all vicissitudes of human life—that is the chief aim of life-insurance. The attainment of this end is, however, called in question if the insurance is liable to attachment by creditors during the lifetime of the insured, or remains freely transferable, subject to pledging, etc.

I would, therefore, define my point of view to the effect that the question presented here should not be regulated by law, but rather by the insurance companies themselves by means of the general insurance provisions.

MR. J. G. VAN CISE (United States) :—

In connection with this question of the protection of wife and children against the claims of creditors, it should be mentioned, as a matter of history, that during the past few years the conditions of American policies have been very considerably changed. As I mentioned in my remarks a few days ago, a demand has grown up in this country more and more for policies for investment purposes, as well as for insurance, and owing to competition, the actuaries have had to deal with that demand whether their own personal judgment approved of it or not. The result is, that in a very large majority of the policies now issued in this country, the privilege is given, after the end of three years, of having the surrender value as a loan, or paid outright in cash, or both, and this privilege is given to the life assured personally, irrespective of the beneficiary or beneficiaries in case of death.

When the company, of which I am the actuary, introduced a policy of this kind about seven years ago, I suggested that the privilege should be given in the contract to change the beneficiary during the continuance of the policy. I offered this advice, because of my personal experience in regard to the difficulty which had arisen from policies which were made absolutely in favor of the wife and children, and in which circumstances afterwards arose in which the life assured desired to change the beneficiary, or especially to sell the policy, and found that, owing to the legal restrictions, this could not be done. In fact, there was a doubt whether the wife could even give a release, or whether the consent of

the children who were minors could be taken, and this caused great practical difficulty and sometimes seemed to be a wrong to the men who had paid the premiums in good faith on the supposition that they could control the policy. For this reason I advised that the contract be drawn giving the assured the privilege of changing the beneficiary, and this was adopted, and this course has since been followed by most other large companies, so that I believe that nine-tenths of the policies now issued in the United States give the life assured the privilege of changing the beneficiary.

This plan, while it certainly is more favorable to creditors during the existence of the policy, as far as my knowledge goes, has worked very well during the past seven years, and I know of no more trouble to wives and children than under the old form, where no cash surrender value is promised, and where no loan is promised, at least to the assured himself. And this leads me to believe that this is a good form of assurance.

As before stated, my intention was to let you know these facts as a matter of history in regard to the American policy, because I believe it is in this respect very different from those issued in other countries.

Again I say, I do not know of any trouble having arisen during the past seven years because of the nature of these contracts, or that the wives and children have suffered because of this privilege being given to the life assured of changing the beneficiary. He can deprive himself of it at any time by executing a legal assignment of the policy to his wife or child or anybody he desires, and give up this right which he received when the policy was taken out. And certainly no creditors have cause to complain, because a policy of this kind helps them rather than hurts them.

Mr. David Carment (Australia):—

This is a subject of a great deal of interest to us in Australia, and the law there is in some respects different from what it is in other parts of the world. There is a very full paper on this subject presented by Mr. Duckworth, and you will find it therein stated that the property and interest of any person in a policy issued on his own life is protected against the claims of creditors to an extent, varying in the different colonies, according to the length of time during which the assurance has been in force. In New South Wales a policy is protected to the extent of two hundred pounds after two years, five hundred pounds after five years, and a thousand pounds after seven years.

There have been a number of conflicting legal decisions on some points, but nearly all of the Australian colonies have passed laws in relation to this matter, and on the whole they seem to work fairly well. Under the latest act passed in Queensland, it is provided that in case of death of the assured in three years from the date of the policy, a sum equal to all the premiums paid with interest at five per cent. shall be set aside and be available for the payment of the debts of the assured. So that in the event of the early bankruptcy of the assured, the creditors are considered to this extent.

A point has been raised as to whether the proceeds of a loan on a policy, or of the surrender value, are protected. It was recently decided in New South Wales that if a man borrows on his policy, the proceeds of the loan are protected from his creditors. But that appears to be doubtful law and the decision may be upset.

Mr. Burridge has spoken of the provisions of the Married Women's Property Acts. In Australia policies are rarely issued under these acts. They are otherwise safeguarded. A policy issued under these acts is tied up and cannot be dealt with, whereas the Australian laws have made no restriction on the power of surrender or of assignment. So that, as a matter of fact, there are very few policies in Australia issued under the Married Women's Property Acts.

Mr. Van Cise has spoken of another point to which I wish to refer, and on this there is a quotation in Mr. Duckworth's paper from Mr. Bunyon, the English authority, who says:

"A power of revocation may always be reserved by the settlor; but to render the provision entirely secure in the event of a subsequent bankruptcy it must be omitted. Such a power exercisable by the settlor at his pleasure is equivalent to the entire interest, and may be exercised by the trustee in bankruptcy for the benefit of creditors."

This tends to show that when power to change the beneficiary is reserved in a policy, such might be held to be a policy which was not fully protected. That point I notice has been fully discussed by the Actuarial Society of America in recent papers. In my mind it is still doubtful.

Dr. S. R. J. Van Schevichaven (Holland):—

Es liegt Ihnen eine gedruckte Abhandlung meines Sohnes vor, ueber die Rechte der beguenstigten Frau und Kinder aus der Lebensversicherungspolice, speziell den Glaeubigern des Versicherten gegenueber, in welcher der Verfasser sich auf den Standpunkt gestellt hat, diese Rechte insoweit zu definieren und zu begruenden, als dies den nach dieser Richtung hin in Holland geltenden Gesetzen gemaess möglich ist. Sie werden es natuerlich finden wenn ich fuer diese Verpeffentlichung meines Sohnes als sein Vertreter hier auftrete; die Art seiner Abhandlung aber macht eine ausfuehrliche Auseinandersetzung nicht noetig.

Das Memoire beantwortet in erster Linie die Frage, welche die Rechte der beguenstigten Personen und des Versicherten selbst sind, so lange die Versicherung selbst in Kraft ist;—und zweitens die Frage nach dem Schutz dieser Rechte sobald die Versicherung zur Auszahlung gelangt; diese Materie ist nicht durch ein Spezialgesetz geregelt worden, sondern die Behandlung richtet sich nach den Vorschriften des allgemeinen Rechtes. Der Verfasser kommt zu dem Schluss, dass die in Rede stehenden Rechte im ersten Fall, d. h. solange die Versicherung besteht,

There is before you a paper by my son, on the rights of wife and children as beneficiaries under a life insurance policy, especially having regard to the creditors of the insured, in which the author takes the position to define and sustain these rights as far as it is possible in conformity with the legislation in Holland. You will find it natural if I appear here as my son's representative regarding this paper; the manner of his discussion, however, makes a detailed explanation unnecessary.

The memoir sets forth primarily the question of the rights of the beneficiaries and of the insured himself, as long as the insurance itself is in force; and secondly, the question as to the protection of these rights as soon as the insurance becomes payable; these questions have not been regulated by special statute but conform to the provisions of the common law. The author arrives at the conclusion that in the first case, that is, as long as the insurance is in force, the rights in question are in toto imperfectly and insufficiently protected by legislation; in the second case, however, they are guaranteed to the last extent, and in concluding his paper he expresses the hope that ere long a law may be enacted which will afford a

absolut unvollkommen und ungenuegend durch das Gesetz gewahrt werden, im zweiten Fall dagegen vollstaendig und sogar übertrieben garantiert sind; und am Schlusse seiner Arbeit spricht er die Hoffnung aus, dass binnen Kurzem ein Gesetz zustande kommen moege, welches die Rechte der beguenstigten Frau und Kinder in rationeller Weise in Schutz nimmt.

rational protection to wife and children as beneficiaries.

Miscellaneous subjects, as indicated by the titles of the papers.

Papers.

On the best plan for preparing and publishing Government Statistics concerning Dangerous Occupations and the Mortality therein, by Mr. Harms-Tiepen of Holland.

Das Abschliessen der Bücher von Gesellschaften, welche Versicherung in verschiedenen Ländern betreiben, by Mr. S. R. J. van Schevichaven of Holland.

Ueber die Hauptbestimmungen der neuen schwedischen Versicherungsgesetze, by Mr. Lundgren of Sweden.

Valuation, in Actions for Damages for Negligence, of Human Life Destroyed or Impaired, by Mr. Dawson of the United States.

Relationship of Initial Expenses and Selection to Valuation, by Mr. Moir of the United States.

DR. S. R. J. VAN SCHEVICHAVEN (Holland):—

Die Staatskontrollierung der Lebensversicherungsgesellschaften ist in vielen Staaten eingetuehrt worden; in anderen ist die Eintuehrung bald zu erwarten, und es ist fraglich, ob die uebrigen Laender derselben auf die Dauer widerstreben koennen.

Die Anregung zu dieser Memoire bei mir war die unangenehme, jaehrlich gemachte Erfahrung, dass die Jahresberichte meiner Gesellschaft nicht vor Juni fertig sein koennen, da die Vergleichung der Buecher unseres indischen Geschaefts mit denjenigen unseres Hauptbureau's sehr viel Zeit in Anspruch nimmt. Und Sie werden verstehen, dass ich ein wenig eifersuechtig werde, wenn ich sehe, dass dies alles in Amerika innerhalb einiger Tage fertig gemacht wird.

Jetzt aber kommt noch hinzu, dass die mit der Aufsicht betrauten verschiedenen Regierungsbeamten eine huebsche Anzahl statistischer Tabellen besitzen wollen, dass sie die Detaillierung der Gewinn- und Verlust-Saldi verlangen,—ja, es existiert eine kleine Stadt in der

State control of life insurance companies has been introduced in many countries; in others its introduction is soon to be looked for, and it is doubtful if the remaining countries will be able to resist it in the long run.

What prompted this memoir of mine was the unpleasant experience, recurring yearly, that the annual reports of my company cannot be ready before June, because the comparison of the books of our Indian business with those of our main office takes a great deal of time. And you will understand why I get a little jealous when I see that all this is accomplished in America within a few days.

To this must be added that the various government officials entrusted with supervision desire a large number of statistical tables, that they call for the utmost detail in the profit and loss accounts—there is even a small city which desires an exhibit of the profit and loss accounts for insurances in force in that city alone. Now and again an exhibit is called for of the profit and

Welt, welche eine Aufgabe der Gewinn- und Verlust-Saldi wuenscht fuer die Versicherungen, welche nur in dieser Stadt bestehen. Dann und wann wuenscht man eine Aufgabe fuer die Gewinn- und Verlust-Saldi, welche die verschiedenen Tarife geliefert haben, u. s. w., u. s. w.

Die Regierungsbeamten haben vollkommen Recht, wenn sie sagen, dass jedermann, der sein Geschaeft auf ein gewisses Land auszudehnen wünscht, sich den Gesetzen und Regeln dieses Landes unterwerfen muss. Ich glaube aber, dass die Gesetze und Regulativen eines solchen Landes gemacht sind ohne Ruecksicht auf die Gesetze anderer Laender zu nehmen, und meiner Ansicht nach ist daher der soeben genannte Wunsch eine Unmoeglichkeit. Ich moechte mir erlauben, das Folgende vorzuschlagen:

"Eine Gesellschaft, welche ihr Geschaeft auf das Ausland ausdehnen will, soll in jedem Staat eine besondere Gesellschaft errichten; es soll dann aber gestattet sein, einen Teil ihres Kapitals in Aktien auslaendischer Gesellschaften anzulegen."

Ich glaube nicht, dass diese Handlungsweise gefaehrlich sein wuerde.

In der gegenwaertigen Situation muessen wohl die verschiedenen Posten der Bilanz die Addition der separaten Posten sein, welche den verschiedenen Autoritaeten angegeben sind,—sonst wuerde die Bilanz der Mutteranstalt nicht stimmen mit den Bilanzen der Sukkursalen. Aber es ist klar, dass sich so etwas nicht in Uebereinstimmung bringen laesst mit der Hauptidee der Lebensversicherung, welche lehrt, dass alle Versicherten zusammen das Risiko der Gesellschaft zu tragen haben. Denn die Lebensversicherung ist wirklich die Vernichtung des Zufalls.

loss accounts pertaining to the various premium rates, etc., etc.

Government officials are quite right in saying that whoever wishes to transact his business in a certain country must conform to the laws and regulations of that country. I believe, however, that the laws and regulations of each country are made without taking into account the laws of other countries, and in my opinion the regulation just mentioned is, therefore, an impossibility. I would take the liberty of making the following proposition:

"A company wishing to extend its business in a foreign country must organize a separate company in each state; it should then, however, be permitted to invest a part of its capital in shares of foreign companies."

I do not believe that this mode of procedure would be dangerous.

Under present circumstances the various items of the balance sheet must consist of the addition of the separate items as given to the several authorities, otherwise the balance sheet of the parent institution will not agree with the balance sheets of the branch establishments. But it is clear that such an arrangement cannot be made to harmonize with the fundamental idea of life insurance, which is that all the insured must be co-partners in the risks of the company. For life insurance is in reality the annihilation of chance.

Mr. M. M. Dawson (United States):—

I have no expectation that my paper will call forth any particular discussion, but I prepared it for the Congress because the whole subject of the valuation of human life destroyed or impaired by negligence, outside of special means of compensating workingmen who are injured in the course of their employment, has, so far as I know, been dealt with by actuaries scarcely at all. But if it had not been for the institution of

insurance companies, probably, outside of the valuation of annuities left in estates, there would have been no other subject that was so likely to form the subject of actuarial investigation.

Mr. Wright was so good as to express a good deal of commendation of the paper as a whole. He also seemed to think that the right way of making these valuations was to use expectations, and he urged that much of value might be accomplished by getting out expectations according to occupation as well as by ages. It is needless to say that I differ wholly from him as to the desirability of valuing on expectations, but outside of that, the sort of expectation which would be necessary or desirable, if we were to use that function as a means of approximation, would be an expectation of life dependent not on the term of the man's life, but on the term taken as a productive life ceasing at some given age. In other words, if we could have statistics of lives engaged in certain occupations, could know about the time when the ordinary season of productive life begins, and could have a rate of mortality for the period between that and the time when it ceases, there would result, with some degree of approximation, the value of the life from the standpoint of this paper.

Mr. Emory McClintock (United States) :—

I think it desirable to call the attention of the Congress with some emphasis to the novelty and importance of the method of valuation proposed in this paper by Mr. Moir. It is not to be expected that any Company which is doing a satisfactory business will change its method of valuation to the method here proposed. But it is true, as stated in the paper, that many small and new companies, stated by Mr. Moir to be one-half in number of the life insurance organizations in this country, are operating on a plan which provides for a valuation the first year on the principle of a term policy for one year, and then, beginning the second year, with a valuation as if the insurance itself began at the beginning of the second policy year. This system was first proposed by Dr. Sprague, but it has been carried far beyond Dr. Sprague's notion by the practice of these companies. Dr. Sprague intended that this system should be applied only to ordinary life policies, with such variations and qualifications as might be prudently feasible if applied to other forms of insurance. Many of the companies to which I refer have taken up the system of issuing ten payment life policies, or ten-year endowment policies, and treating the first year's premium as a premium for a term insurance, and then making the rest a nine payment life or a nine-year endowment policy. That practice cannot be approved of by any actuary, but it is used and is considered legal in almost all the States of this country. The substitution of a mathematical system like this described in Mr. Moir's paper for that unscientific practice is certainly to be preferred. The new and struggling companies are admitted now under the law to carry a small reserve during the first year, and none at all at the end of the first year. Various plans have been proposed to relieve the burden imposed upon such companies by the net valuation laws, but I am inclined to regard this as the most cautious, prudent, and conservative system of that kind which has ever been proposed. I prefer it for that purpose to Dr. Sprague's method, in view of the way in which that method is now used.

I expressed approval, under certain conditions, of Dr. Sprague's method five years ago, in a paper published in the transactions of the

Actuarial Society of America. I have since been quoted as approving applications of that method which I do not approve, and I now repeat that my approval of that method is limited by the same conditions as those expressed in that paper.

MR. WALTER C. WRIGHT (United States):—

There is no good substitute for general equity and economy, and these need no special valuation devices.

Elizur Wright wrote many years ago, "Mr. Gladstone, in his noble effort to rescue at least the laboring classes of Great Britain from the frauds of life insurance, while he secured to them its benefits, thus graphically described its peculiarity in words that deserve to be deeply pondered by the American people at a time when they are passing their money at the rate of sixty millions of dollars per annum into these institutions:

"'To those who tell me that this is to be considered as standing in the category of common commercial business, I would reply: Consider for a moment the peculiar nature of life assurance. This is a business that presents the direct converse of ordinary commercial business. Ordinary commercial business, if legitimate, begins with a considerable investment of capital, and the profits follow perhaps at a considerable distance. But here, on the contrary, you begin with receiving largely, and your liabilities are postponed to a distant date. Now I dare say there are not many members of this House who know to what an extraordinary extent this is true. When an institution of this kind is founded, so far from having difficulties at the outset, that is the time of its glory and enjoyment. The money comes rolling in, and the claims are at a distance, almost beyond the horizon. In the first year of the society the premiums far exceed the death claims. This is also the case in the subsequent years. For how long a period does the House think the premiums to be received are in excess of the death claims? For thirty-seven years.'"

(Speech in the House of Commons, March 7, 1864.)

Mr. McClintock, *Papers and Transactions,* A. S. A., Vol. III., pages 156 and 157, said:

"Mr. President, if there is nothing particular before the house excepting reference to everything that has been said in the past four years, I would like to say a word about a remark made by Mr. Craig a little while ago, in regard to charging the expense of educating each new applicant against his own policy. Now, it must be in accordance with Mr. Craig's experience that that can only be done, if it is done at all, in a very general sort of way. . . .

"But, apart from any practical difficulty, there is a very strong theoretical difficulty. No man ought to be educated into insuring his life in a given company at the expense of that company, for that man's benefit. If the company takes to proselyting and educating people to insure their lives, it is for the company's benefit. If it is not for the company's benefit to educate those men, the company has no business to go into that work. The risk, when it is secured, belongs to the company. And there is where the fallacy comes in of giving too great surrender values. Every man who has once made his bargain to pay his premium has no right to a surrender value until the company is made good from every point of view for the damage he does by going out. I see no harm in the old and general practice of charging the expense to the company at large."

As between the initial term insurance plan, and the present proposal of Mr. Dawson, as set forth in this paper by Mr. Moir, which I understand to be a sort of substitute for that, I am inclined to think the old the simpler and better one. Both can be made equitable in a way. The latter does not seem to go quite so far as to distribute or use the whole actual vitality gain from the new members of a company, solely for the benefit of those members, but only *so* much as a complex valuation by means of a select and an ordinary or "ultimate" table may make available for that purpose.

This seems to me an unnecessarily elaborate expedient, and it assumes as a settled question, what I think is very far from being settled in this way: viz., that the vitality gain which arises among new members owing to the care exercised in selection by the medical examiner, who is paid by the *whole company,* belongs to the new members exclusively as distinguished from the old, notwithstanding also that each one of the former was naturally prompted to insure owing to conviction of his liability to die, and some among a given number always do die while still new members.

It always takes two to make a fair or honest bargain, and in every such bargain *minds must meet*—there must be a just *quid pro quo.* The *quid pro quo,* which I suppose Mr. Dawson and those who agree with him see in this case, is the fact that he who pays his own initial expenses, and saves the older members of the company he joins from taking any share thereof, is entitled to the vitality gains which he or rather his class as a body bring to the company.

But it seems to me that the old bargain, or the consideration that for the sake of the help of the fresh blood, the old member may well take a share of the initial expenses incurred by the company as long as he remains a member, is equally sound, and is by so much the better view of the equity practically, that it admits new members, who are the less disposed to insure the more confident they may be of living, without any discouraging question of especially high assessments for expense to start with. This rule treats the company as a unit, and serves every member according to the *computed value of the service rendered him,* as a basis of measure, from time to time, and for all time. This seems to me satisfactory, and for the reason stated by Mr. Gladstone which I began by quoting, I do not see why it cannot be applied by new at least quite as well as by old companies, presupposing that they start with some basis of average, or a reasonable amount of capital to draw on while getting it.

But Mr. Dawson's labor, I think, has been actuated by a kindly purpose having little to do with the abstract treatment of this question. What can be done to save the eager and ambitious small companies? The little frogs with bad habits already fixed, which are like to burst with straining, to imitate the great oxes of life insurance. Alas, whatever may, I have no hope that his new formula will do this. Raising or advertising the entrance fee, stops entrance! I see no way for the new generation to do to get a *start* but to learn to do better if possible than their fathers did, and patience and perseverance will do the rest. There are some things which are not at present done perfectly by old concerns, which they can help themselves by putting into practice.

MR. LUCIUS MCADAM (United States):—

As an actuary of a company which is now operating upon the preliminary one-year term plan, I think it is quite proper for me to make

such defence as occurs to me of the criticism made by Mr. McClintock upon that method as practised in these companies.

His criticism in particular is directed to the fact that on any form of insurance, whether ten-payment life, ten-year endowment or ordinary life, they use the whole first premium as preliminary term, and it is rather a suggestion, as has been suggested also in other quarters, that it should be confined simply to ordinary life policies, or that the first premium should be such as simply to cover the cost of the preliminary term, or at least should be a constant quantity as to all policies; and he expresses the opinion that no actuary can justify the plan as operated.

The plan was first introduced in the company with which I am connected by William D. Whiting, who, I think, had some reputation as an actuary, and I don't know that he would have suggested any different plan than the one we are now operating under. As Mr. McClintock has himself stated, about half the companies in the country, the younger companies at least, are operating upon this plan, and I think most of them upon the plan that I have stated. It must be presumed that these companies have actuaries themselves, or, if they have none of their own, that they at least have consulting actuaries who have examined this plan.

Now, it occurs to me, not only having been an actuary but secretary of a life insurance company, and a lawyer in some practice in life insurance law, to suggest that scientific theories very often have to give way to practical facts.

The object of this plan is twofold; it is not merely to get the advantage of a small reserve in the initial stages of the company and of the policies which they issue, but also to provide an automatic method by which the expenses of the Company may be properly distributed. That is to say, whereby the first year's expenses may be automatically placed upon the first year's business. Because the plan necessarily involves this fact, that the loading of the first year in any case is substantially the difference between the premium charged and the net premium for a single year's insurance, and the result is a very large loading upon the endowment policies, and the ten life payment policies, and a smaller loading upon the life policies. Now, thereby we raise a very large sum, perhaps, for the first year expenses, which forms a general fund from which the first year's expenses are paid. Of course, it may be said scientifically that there is an injustice in one paying very much more for the first year's insurance than another, and this would be so if we were to consider that the individual intends merely to take his policy for one year or intends to drop it at the end of the third or fourth year, and carry off whatever he may have there in the way of guaranteed values; but if he intends, as he should intend, to carry the contract out to the end, then no injustice has been done him. Neither has any injustice been done to the entire body of policy holders. In fact, it seems to us who use this plan, that the old fashioned method does a practical injustice by taking away from the surplus belonging to the policy holders a certain amount which is applied to pay the expenses of the first year's business. And that we regard as a greater injustice than confining or attempting to confine, to a large degree at least, the first year's expenses to the first year's premium.

Mr. David Carment (Australia):—

I understand that the formula recommended in this paper by Mr. Moir is intended to effect the same purpose as Dr. Sprague's original idea, which has no doubt been carried by some companies much further

than he ever imagined or intended that it would or should be carried. The same principle in Australia, as I know, and probably in England also, is applied to endowment assurances as well as to whole life policies. In the former case it is very difficult indeed to figure what the real premium is. For the purpose of bringing up that point several Colonial Acts require that the net premium actually valued be stated both as regards endowment assurance policies and whole life policies.

Now, the result is that possibly a four per cent. net premium might be more stringent than that which is by some companies called a net premium on the three and a half per cent. basis. Because the company which states that it uses the three and a half basis may not be working on a net premium valuation and it is impossible to tell which is the more stringent of the two.

I quite agree with the remarks of Mr. Wright. The company, I think, must be looked at as a unit, its business must be considered as a whole, and it is not absolutely necessary to charge each policy its own rate of expense, nor is it always advisable nor possible to do so. Presumably the office would not seek for this new business unless it deemed it advisable in the interests of the general body of policy holders. Therefore I think that it is far better for companies, if they possibly can, to make strictly net premium valuations, or at least come to such a basis of valuation at the earliest possible moment. I think this a matter which should be put before all companies, both in Australia and in England, where the legal regulations, such as exist in America as to making strictly net premium valuations, do not obtain.

Mr. Fritz Trefzer (Switzerland) :—

Ich moechte noch einmal auf das Elaborat des Herrn Moir zurueckkommen. Ich habe mir schon erlaubt, den Wunsch auszusprechen, dass die Frage, welche Herr Moir behandelt hat, in ausfuehrlicher Weise auf dem naechsten Kongress behandelt wird. Ich moechte Sie darauf aufmerksam machen, dass diese Frage gegenwaertig auf dem Kontinent, und besonders in den Laendern deutscher Zunge sehr im Flusse ist, und ich moechte Sie ganz besonders auf eine Brochure aufmerksam machen, welche von einem Anonymus unter dem Titel, Logophilus, Der Streit über die Zillmersche Methode in der Lebensversicherung. Berlin 1902, Verlag der Zeitschrift für Versicherungswesen, publiziert worden ist.

Ich glaube, diese Frage ist in Verbindung mit der Umwaelzung, welche sich bei der Umrechnung der Praemienreserve vorbereitet hat, durch die Arbeiten von Sprague und anderen, durch die eben uns bekannt gegebenen Arbeiten der amerikanischen Aktuare, und durch die Untersuchungen deutscher Ge-

I would like to revert once more to the paper of Mr. Moir. I have already begged leave to express the wish that the question treated by Mr. Moir be discussed in detail at the next Congress. I would like to remind you of the fact that this question is at present much discussed on the Continent, especially in German speaking countries, and I want to draw your attention particularly to a pamphlet published anonymously under the title, Logophilus, Der Streit über die Zillmersche Methode. Berlin, 1902, Verlag der Zeitschrift für Versicherungswesen.

I believe that this question has become vital in connection with the changes which have been preparing for the reduction of the premium-reserve through the efforts of Sprague and others, through the efforts of the American actuaries just communicated to us and through the investigations of German companies in regard to the mortality on select lives; and it is necessary that the next Congress deal with it as thoroughly as possible. I there-

sellschaften ueber die Selektions-Mortalitaet, brennend geworden, und es ist notwendig, dass der naechste Kongress sie so eingehend wie moeglich behandle. Deshalb erlaube ich mir, den folgenden Antrag zu stellen:

Der vierte Kongress der Aktuare wuenscht, dass der folgende, der fuenfte Kongress in eingehender Weise die Frage behandle, ob bei der Berechnung des Deckungskapitales ausser den bisherigen Grundlagen auch noch andere Elemente, wie die Anschluss-Provision, die Kassenprovision, Verwaltungskosten, Zuschlagspraemien, Sicherheitspraemien u. s. w. bei der Berechnung der Praemienreserve in Anschlag zu bringen sind, und dass er diese Frage eingehend zu pruefen und zu sichten habe.

fore take the liberty to make the following motion:

It is the wish of the fourth Congress, that the next (fifth) Congress discuss in detail the question whether in calculating the present value of the sums assured, other elements besides the bases hitherto assumed, such as expenses of management, loadings, extra premiums, etc., shall be taken into account in the calculation of the premium-reserve and that the Congress sift this question to the bottom.

Mr. Niel Ballingal Gunn (Great Britain):—

With reference to the formulas of Mr. Dawson and also with reference to the formula originally proposed by Dr. Sprague, it seems to me that formulas of that kind may be suitable for the purpose of ascertaining whether the office is solvent, but should not be used for the purpose of ascertaining the profit of the office. I think that we are entitled to look upon assurance offices in pretty much the same way as upon other business concerns, and I do not think that you would care to hold stock in a company which, after it had been ten years in business, was in the habit of adding to the profit it declared the cost of obtaining new business.

I think that a great majority of actuaries in the United Kingdom regret that Dr. Sprague gave the weight of his name to the formula.

Mr. Robert G. Hann (United States):—

I think all will agree that the strength of the present system of net premium valuation lies in the fact that it puts all contracts on the same plane, and exacts a rigid account of every premium received.

I do not think that we can adopt a table, which is based on the saving from mortality in the early years of insurance, which would suit the conditions of all companies. Some companies may save a considerable amount by reason of the good selection of their risks during the first five years; some may suffer a heavy loss from the same cause; others again may neither save nor lose, and if we are going to make valuations on a uniform scale, the reversions and annuities being constructed on some definite assumption, then we are all at sea again, so far as the actual facts are concerned.

It is true that the present system is hard to follow, inasmuch as the reserve is not always in hand at the end of the year, after providing for the necessary expense, but everyone will admit that it tends toward safety to be kept strictly to an account of all the premiums received, as is the present custom. I do not see how the adoption of this plan advocated by Mr. Moir woud lead to economy; in fact I think it leans in the opposite direction, and therefore I think that safety lies in a

system which admits of no variation. I think we ought to have far weightier reasons than those which have been brought forward to induce us to depart from what we consider a safe system for all solvent companies.

I may say, however, that Mr. Sprague, when he introduced his formula alluded to by Mr. King, made the remark that it would be better, of course, if companies had their full reserves from the inception of the contract.

Mr. Arthur McDougald (Canada) :—

Inasmuch as this subject furnishes a very live problem in this country, it is of course of great interest to Canadians, and it is, in my view, very likely to become an equally live subject in the adjoining country.

In listening to Mr. Carment's remarks, the question has occurred to me as to whether it would not clear the air if we could have a clear definition of what a net premium valuation really is. I see that in this formula if we put n equal to zero, we get a negative value, and it occurs to me that this is not the idea which is in the minds of most of us as to what constitutes a net premium valuation. On the other hand we find that when the period of selection has expired, this formula becomes compatible with the definition, as I understand it, of a net premium valuation.

Mr. Jesse J. Barker (United States) :—

I do not wish to be considered an advocate of the preliminary term system as of universal application, but I certainly believe that it has its place. I think it is defensible both from a scientific standpoint and in its legal aspects.

There is no doubt that a company can agree to issue ten year endowment policies, nine year endowment policies or endowment policies for any term of years. Nor is it impossible for the company to presently agree that, at a date a year or two years or three years hence, it will issue that kind of a policy. But from a legal standpoint, an agreement of that character would not be a contract unless a consideration had passed. That consideration might be the issuing and the paying for a preliminary term policy, at the proper rate of premium therefor, to cover the intermediate period. For this reason I consider that it is not only defensible from a legal but from a scientific standpoint, and I am very sorry to think that we should be wedded to old methods and ways to the exclusion of new ideas.

The whole trouble seems to arise from the high expense incident to the soliciting of the application and the issuing of new insurance, and there should be some equitable method, some way in which this heavy expense can be covered without drawing upon the accumulated funds of other members. I see no way in which this can be done under the present high pressure system other than by this preliminary term charge.

Mr. James Raffmann (Hungary) :—

Es wurde von der Zillmer'schen Methode der Reserveberechnung gesprochen. Ich habe mich immer dieser Methode feindlich gegenuebergestellt, ob sie nun Zillmer'sche, Sprague'sche, oder sonst wie heisst.

Mention was made of Zillmer's method of calculating the reserve. I have always assumed a hostile attitude towards this method, whether it is called Zillmer's, or Sprague's, or otherwise.

As nevertheless, it is occasionally

Da es aber gelegentlich doch notwendig ist, im Interesse schwacher Gesellschaften diese Methode zu gestatten, so kann ich mich nur mit Herrn Moir einverstanden erklaeren, die Zillmer'sche Methode mit derjenigen in Verbindung zu setzen, welche auch die Mitberuecksichtigung der Anlagekosten bei der Reserveberechnung gestattet.

Da aber nach zwei bis drei Jahren der Einfluss der Selektion so stark wird, sogar noch staerker als nach der Zillmer'schen oder Sprague'schen Methode, —wie ja auch die Zahlen gezeigt haben, —so bleiben doch in Zukunft fuer die Reserveberechnung nur die "Aggregate Tables" ein fuer alle mal anwendbar.

necessary to allow that method in the interest of weak companies, I can only concur with Mr. Moir in proposing to combine Zillmer's method with that which admits of also taking into account the original cost of the business, in calculating the reserve.

As, however, after two or three years the influence of selection becomes so strong, even stronger than according to Zillmer's or Sprague's method—as has been shown by figures—only the "Aggregate Tables" will, once for all, be practicable in the future for calculating the reserve.

Mr. Daniel H. Wells (United States) :—

As an International Congress, there is perhaps not much interest in matters that concern this country alone, but it has occurred to me that some of our foreign friends may have wondered how it happens that this preliminary term method of valuation has found so much favor among our insurance officials.

We have in this country forty-five States which are, in most respects, sovereign. Any one of them can exclude from its borders any insurance company, and the general government has no power in the matter. I am credibly informed that the Insurance Commissioners of some States have said to the Insurance Commissioners of States which do not look with favor upon this method of valuation, "If we had a company in this State which wished to make a valuation by this method, I should believe in it, but you, as commissioner of your State, would not accept my valuation made upon that basis. Therefore, I should not accept the valuation made by you upon the net premium basis in the case of companies of your State. I should require, under these circumstances, all the companies of your State to furnish a schedule of all their policies to be valued by me and such valuation to be paid for by the companies."

You can understand that the commissioner of a State having a number of companies would hesitate some time before putting himself in such a position, where the companies of that State would be required to furnish schedules of their policies to one or perhaps a half dozen different commissioners of other States, because he refused to permit a preliminary term valuation.

Mr. M. M. Dawson (United States) :—

I merely wish to add one word to what Mr. Wells has said in order to complete the record and make clear the position of a part of this country on what is called the preliminary term valuation. Up to this time the Insurance Commissioner of Massachusetts has resolutely and persistently refused to acknowledge the correctness of preliminary term valuation, and has been therein sustained by the legal officers of the State.

Mr. M. M. Dawson (United States) :—

The statement made by Mr. Ireland is, of course, entirely true, but

there should be added to the statement the fact that the same commissioner has twice favored bills, both times passed, that granted preliminary term valuation, without the necessity for making the policies' term in the first year at all by their terms, to small and weak companies in the State of Massachusetts, but confining it to certain companies.

I am sorry, personally, that this discussion has called out the remarks as to, and turned so much on, preliminary term. The horrors of preliminary term have been depicted, and as to some of them I think you will find that I fully agree.

I am also very sorry that the fact has not been more thoroughly recognized by those present that this formula is a method suggested for putting this question on a scientific basis without relation to the question of preliminary term at all, and as a means of doing away with the very faults to which some speakers have so eloquently referred.

The formula consists simply of this: The net premium at the actual age by an ultimate table with the annuity and reversion taken from a select table, corresponding to that original table. The idea is not wholly new, although the formula is. In one of the first papers that Dr. Sprague wrote on the Select Tables he enunciated the principle. You will find this in the *Journal of the Institute of Actuaries,* Vol. 22, p. 416:

"Taking the general formula for the net value of a policy, it is obvious that the fact of the life being still select is no reason for altering the value Px; but the values of the assurance and annuity must be those for select lives."

Dr. Sprague for some reason—I think because his life was so busy—failed to put that into a formula, and also failed to make the remark which I think he would surely have made, that Px should be by the ultimate instead of by the aggregate table.

The other day, when Mr. King's paper was under discussion, I mentioned this same matter. I shall revert to it now. The British actuaries have been making their net premiums by the select table, which is practically the sole use they have so far made of such table. Their argument is that the net premium should follow the actual facts very closely. But it is far more important that the valuation should follow the actual facts very closely. When net premiums are made by the select tables, it means that, on the average, we will say, one-half of the companies are using a lower net premium than the actual facts of their own experience would warrant, which is an enormously more serious thing than that for three years a company should have a smaller reserve under a given policy than is brought out by the present system.

This proposal is not an attempt to increase the expenditures of companies, nor an attempt to lower the standards of solvency. It is an attempt in this country, as everybody within the sound of my voice knows, as to one-half of the companies to raise the standards of solvency.

Mr. Clayton C. Hall (United States):—

In the course of this discussion one or two remarks have occurred to me which I ask permission to express.

One gentleman spoke of the combination of a one or two year term policy to be followed by another, an endowment policy for a term of eight or nine years as the case may be. It is unquestionably true that such a contract could be constructed, and it would be perfectly legal. A company could issue a two-year term policy, and it could also issue an eight year endowment to take effect two years hence, and there is no physical

impossibility about writing these two contracts on the same piece of paper, but if it issue a policy which is upon its face a ten year endowment policy, with a uniform premium, and then undertakes by a private agreement to treat it as a two year term policy, to be followed by an eight year endowment, it seems to me that then the parties have entered into a contract that is neither scientific nor legal.

We can recognize in the formula of which Mr. Dawson is the author, a great improvement over any such method of "preliminary term insurance" as has been heretofore practised, but it seems to me that one of the gentlemen spoke very wisely this morning when he said that even this plan confounded saving from mortality, with the provision for expense, two subjects that ought to be kept definite and distinct.

There would be a disposition by this method of valuation to lead persons to say that in view of our anticipated saving in mortality during the early years of the policy, when the whole amount appropriated for the cost of insurance would not be required for meeting losses arising on this particular class of policies, you might therefore anticipate that profit, and use it for first year's expenditure, that is for expenses, banking, as it were, upon your hopes rather than upon your experience.

But of course the method of valuation does not increase or diminish the company's assets. It is merely a question as to how much of the accumulated fund which the company may hold consists of reserve, and how much consists of surplus. If the reserve be higher, the surplus will be smaller, and the sole object of this method of valuation would be to keep the reserve down in order to conceal, or to prevent—I would say to conceal—what would otherwise be apparent as a diminution in surplus.

I think any such method is extremely dangerous. Its effect would be to deceive the public as to the relative resources of companies, and, worst of all, to deceive those who adopt it in practice as to the financial condition of the companies for whose administration they are responsible.

Mr. Henry Moir (United States):—

For two or three years past I have made a particular study of this preliminary term method of valuation, and my opinion on the subject is that it has been of service to life insurance in this country.

I find also that a general misconception of the paper seems to have taken place partly perhaps because it is a condensed paper and partly because members have not had time to read it or to understand it properly. Mr. Carment frankly admitted that he had not had time to read the paper carefully, and I think that many of the other speakers were in a like position, because the general impression conveyed by the discussion is that the speakers think this new method would give greater scope for extravagance in procuring new business than the net premium method of valuation. That is entirely a mistake. On the contrary the new formula fixes a limit for the initial expense which can be incurred, provides for this expense in calculating the premiums, and thereafter makes the proper allowance in valuation.

Mr. Carment said that companies should come to net valuation at the earliest possible moment. Now, that is exactly what the new formula does. It comes to exact net valuation within four or five years, indeed for all practical purposes at the end of three years. Each policy after being five years in existence carries the full net value on a stricter basis than that generally understood in Great Britain, where I know the conditions so well.

Mr. Gunn referred to two different conditions—one valuation for office purposes, and the other valuation for standard of solvency. Now, I do not differ from him in the slightest degree on this general proposition; nor would I ever suggest that the method adopted in his own office should be discontinued. Yet it is not net valuation. It is indeed much stricter than net valuation.

Life assurance here is like a great tree. One of the main branches has been growing out in a direction which is dangerous, more than dangerous, because the preliminary term method has been applied for two years, and as Mr. Dawson pointed out, has been offered on policies where the protection during the first year was about a hundred dollars and the premium charged the same amount. Now, if we attempt to twist back hurriedly the branch of a great tree, the result is the breaking of the branch and danger to the tree. But, if we force the branch slowly and exert a constraining influence gradually as it grows, we can bring it round and change it from a course of danger to one of absolute and perfect safety. This is what is attempted by this method of valuation. It is intended to take away the dangerous element from the present methods of valuation and introduce something more satisfactory and safe.

Subject, *The Province of State Supervision of Life Insurance Companies.*

Papers.

Du contrôle par l'Etat des entreprises d'assurances privées, by Mr. Maingie of Belgium.

Die Staatsaufsicht über die Lebensversicherungs-Gesellschaften in Deutschland, wirtschaftliche und juristische Grundsätze, by Mr. Manes of Germany.

On the Province of State Supervision of Life Insurance Companies, by Mr. Chisholm of Great Britain.

Forme donné en Suisse au contrôle de l'Etat sur les Sociétés d'Assurances sur la Vie, by Mr. Rosselet of Switzerland.

In addition to the discussion on these papers the programme provided for a general discussion on

The Province of State Supervision of Life Companies, whether (1) *Confined to securing publicity; or* (2) *Securing publicity and Solvency; or* (3) *Securing publicity and solvency, and suppressing practices which violate the principles of equity; or* (4) *Securing publicity and solvency, and taking part in the determination of methods before their adoption by companies.*

Dr. von Knebel Doeberitz (Germany):—

Die Arbeit des Herrn Dr. Manes betreffend die Staatsaufsicht ueber die Lebensversicherungs-Gesellschaften in Deutschland, bespricht hauptsaechlich nur die groesseren Unternehmungen, deren Bereich über das Gebiet eines einzelnen Bundesstaates hinausgeht; sie enthaelt dagegen nichts naeheres ueber die kleineren Unternehmungen, deren Gschaeftsbetrieb auf einen deutschen

The paper of Dr. Manes concerning state supervision of life insurance companies in Germany discusses chiefly the larger enterprises whose scope extends beyond the territory of a single federal state; on the other hand, it contains no particulars in reference to the smaller enterprises, whose business is confined to one federal state. As I am a member of the German Bureau of

Bundesstaat beschraenkt ist. Da ich sowohl Mitglied des deutschen Aufsichtsamtes fuer Privatversicherung als auch des Ministeriums des Innern fuer Preussen bin,—also des groessten deutschen Bundesstaates,—so will ich mir erlauben, einige Worte der Arbeit des Herrn Dr. Manes hinzuzufuegen.

Das deutsche Versicherungsgesetz unterscheidet naemlich, soweit es sich um die gegenseitigen Versicherungs-Gesellschaften handelt, einerseits zwischen groesseren Unternehmungen, den sogenannten "Eingetragenen Vereinen," welche dem Eintragungszwang in die Register unterliegen,—und andererseits zwischen den sogenannten "Kleineren Vereinen," welche diesem Eintragungszwang nicht unterliegen. In Preussen und in einzelnen anderen Bundesstaaten kommen als solche kleineren Vereine in Betracht die sogenannten Versorgungskassen. Unter Versorgungskassen versteht man die verschiedenen einzelnen Kategorien der Sterbekassen, Witwenkassen, Pensionskassen u. s. w. Alle diese Kassen sind kleinere Lebensversicherungs-Unternehmungen auf Gegenseitigkeit, welche kleinere Summen versichern als die groesseren, die eigentlichen Lebensversicherungs-Anstalten. Auf diese kleinen Versicherungs-Gesellschaften finden im wesentlichen die Vorschriften des deutschen Versicherungsgesetzes ebenfalls Anwendung; aber da ihr geschaeftlicher Betrieb bedeutend einfacher ist als derjenige der grossen Lebensversicherungs-Gesellschaften, so hat das deutsche Reichsgesetz eine gewisse Anzahl von Ausnahmen zugelassen fuer diese kleineren Unternehmungen. In erster Linie sind sie befreit von dem Eintragungszwang. Dann sind zugelassen gewisse Erleichterungen bezueglich der Buch- und Rechnungsfuehrung; und endlich wird die Aufsicht des Staates ueber sie, ueber diese kleineren Unternehmungen, nicht geuebt durch das Kaiserlich Deutsche Aufsichtsamt, sondern durch die betreffende Staatsbehoerde des einzelnen Bundesstaates.

Die wirtschaftliche Lage dieser Unternehmungen in Preussen war vor Erlass des deutschen Reichsgesetzes nicht ueberall eine gluecklich. Diese Unter-

Supervision for Private Insurance, as well as of the Prussian Ministry of the Interior—the largest of the German federal states—I ask permission to add a few words to the paper of Dr. Manes.

The German insurance law distinguishes, as far as the mutual life insurance companies are concerned, between the larger enterprises, the so-called "Registered Societies," which are subject to coercive registration, and the so-called "Lesser Societies," not subject to this coercion. In Prussia and in some of the other federal states the so-called "Versorgungskassen" are to be considered as such lesser societies. By "Versorgungskassen" are meant the various individual classes of associations providing death benefits, widows' funds, pensions, etc. All of these associations are small mutual life insurance concerns, which provide smaller benefits than the larger, the real life insurance institutions. To these small insurance companies the regulations of the German insurance law likewise apply in general; but as their business management is much more simple than that of the large life insurance companies, the German imperial legislation allows a certain number of exceptions in the case of these smaller enterprises. In the first place they are exempt from coercive registration. Certain exemptions are granted them relative to the keeping of books and accounts; and finally, state supervision over these smaller concerns is exercised, not by the Imperial German Bureau of Supervision, but by the respective authorities of the individual federal state.

The condition of these enterprises in Prussia was not wholly satisfactory before the enactment of the German imperial law. These enterprises, some of which date from a very early period, are for the greater part still based upon the so-called assessment system, according to which no fixed dues are collected, but in each separate case an assessment is imposed upon the individual members. The experience we have had in Prussia with these smaller life insurance concerns has, as I said, not always been favorable. It was essentially the same

nehmungen beruhen,—sie stammen zum Teil aus sehr alter Zeit,—zum grossen Teil noch auf dem sogenannten Umlagesystem, wonach keine festen Beitraege erhoben werden, sondern im einzelnen Fall die Umlage auf die einzelnen Mitglieder gelegt wird. Die Erfahrungen nun, die wir speziell in Preussen mit diesen kleineren Lebensversicherungs-Unternehmungen gemacht haben, sind,—wie gesagt,—nicht ueberall guenstige gewesen. Sie sind im wesentlichen dieselben gewesen, wie man sie hier in Amerika mit den Assessment Associations und den Fraternal Societies gemacht hat, welche auch auf dem Umlageprinzip beruhen. Im Anfang laesst sich zwar die Sache recht schoen an; die Sterblichkeit ist gering, und die Hoehe der Umlage infolge dessen ebenfalls eine geringe. Mit der Zeit aber steigt die Sterblichkeit, und infolge dessen die Hoehe der einzelnen Umlagen, bis sie derartig gross geworden sind, dass die uebrig bleibenden Mitglieder,—insofern nicht immerwaehrend neue Mitglieder hinzutreten,—sie nicht mehr aufbringen koennen, und die Kasse verkracht, sie wird bankerott und muss aufgeloesst werden.

Um derartigen Unzutraeglichkeiten vorzubeugen, wird nunmehr die Vorschrift des deutschen Reichsgesetzes in gleicher Weise auch auf diese kleinen Lebensversicherungs - Unternehmungen angewendet. Insbesondere wird auch in Zukunft festgehalten werden an dem von uns in Preussen schon waehrend des letzten Jahrzehntes angewandten Prinzip, wonach derartige, auf dem Umlagesystem beruhende Kassenunternehmungen nicht mehr konzessioniert werden. Im uebrigen werden wir aber nicht mit rauher Faust die neuen Vorschriften anwenden auf diese kleinen Gesellschaften, sondern ihnen Zeit lassen zu allmaehlicher Gesundung. Wir hoffen, dass unter der Herrschaft des neuen Reichsgesetzes, welches sich ja, wie Herr Dr. Manes in seiner Abhandlung richtig ausfuehrt, in erster Linie auf die grossen Unternehmungen bezieht, auch die Vereine der kleineren Art allmaehlich gesunden werden, und dass dem Verfall derselben vorgebeugt werden wird.

as has been experienced here in America with the Assessment Associations and the Fraternal Societies, which are also based upon the assessment system. In the beginning the system promises well; the mortality is light and the amount of the assessment consequently small. As time goes on, however, the mortality increases and in consequence the amount of each assessment is larger, until it becomes so large that the persistent members—unless new members continually come in—can pay no more, and the office is broken; it fails and must be dissolved.

To avoid such disadvantageous results, the regulations of the German imperial law are now applied in the same way also to these small life insurance concerns. In future especially the principle will be adhered to, which has been applied by us in Prussia during the last decade, and according to which such undertakings, based upon the assessment system, are no longer licensed. We shall, however, not rigorously apply the new regulations to these small companies, but give them time for gradual recuperation. We hope that under the control of the new imperial law which, as Dr. Manes correctly states in his paper, primarily refers to the larger enterprises, the societies of the smaller kind will also gradually be placed on a sound basis and their decline be prevented.

MR. CHARLTON T. LEWIS (United States) :—

In the very short time permitted for the discussion of this subject, it would be absolutely impossible for me to at all attempt to cover the ground I should desire to cover. I shall confine myself to the expression of a brief protest.

How it is possible for any actuary in the United States to feel or to show any tolerance of the so-called system of state supervision which prevails here, I have never been able to understand. While there are among the members of the Actuarial Society a number of gentlemen whose position before the public compares favorably with that of any actuaries throughout the country, that position is acquired for them with difficulty, and solely by their own intellectual qualifications and achievements. But, apart from this, it is a fact which stands out prominently before us, that the position itself of the actuary in the United States is inferior to this position in such a country as England, and the influence of the position does not compare here with the influence of it there, and the reason why this is so is simply because we have this system of state supervision, under which a mind that has no pretensions whatever to rank with their minds, a training which has no pretension whatever to compete with theirs, is set over them. Intellect, accomplishments, experience, knowledge, do not prevail, and it is reserved for officialism, and a character and a mind which may be, and in nine hundred and ninety-nine cases in a thousand is, incomparably inferior to theirs.

I wish to call attention to the fact that each of the papers, which are before us to-day, and which relate to the province of state supervision, bears more or less an official character and makes an assumption which I am prepared to dispute. The assumption made is that official decisions, and again official expert work, is necessarily and essentially not only pure but wise. That it is free from the human element; that it is elevated above mankind, and that it is essentially and of its own nature superior in character to the actuarial work which has no claim to acceptance except its scientific character. That assumption, I say, lies at the basis of each of these papers, and if you take that assumption away, the whole structure on which each of these papers is based falls to the ground. Once admit that official actuarial work is susceptible of error, that it may go astray, under influences which appeal neither to character nor intelligence, and which lead to mistakes, and there is nothing left of these appeals for state supervision transgressing the boundaries of that which is necessary for the information of the public, for meddling with the affairs of companies, for interfering with their work, for undertaking, in short, to regulate, control and dictate the business of insurance from the seat of government. This assumption I will turn away, because there is nothing in stamping a man with an official character to lift him above the common level of humanity, and if we once admit this, and do away with the superstition with which officialism is associated in the minds of so many men, the whole fabric of these papers which advocate it falls to the ground.

I want to go further in this protest. Suppose we admit for a moment the whole of the ground claimed in these papers, and allow that to make a man an official elevates his intellect and his character and frees him from ordinary mistakes, and makes it impossible for him to be otherwise than infallible. Resting upon that ground, what is the result? I say if that be admitted and accepted as true, the greatest misfortune which could befall the world of insurance would be the embodiment of

this infallibility in the administration of state supervision. Just as the greatest misfortune which could befall human civilization would be the enthronement of a power above every man, which should dictate to his will all its concerns and all its conduct.

PROF. PIETRO BOTTINI (Italy) :—

Les mémoires qui sont présentés au Congrès, démontrent deux tendances principales: celles qui demandent un contrôle très grand par l'Etat, et celles qui ne demandent qu'un contrôle très restreint. Il n'est pas possible d'éviter tout contrôle. Je suis pour le contrôle restreint. En effet, la différence essentielle entre les Sociétés d'Assurances et les autres entreprises commerciales est uniquement dans le calcul des réserves mathématiques et le contrôle de l'Etat devrait se borner à garantir la publicité et la sincérité du bilan et l'exacte calculation des réserves. Il n'est par nécessaire, dans ce but, d'arriver au système Américain que l'Etat calcule, lui-même toutes les réserves des Compagnies. Il serait suffisant de reconnaître officiellement, les Sociétés d'Actuaires de tous les Pays et de leur donner les pouvoirs nécessaires afin que les actuaires qui sont instruits peuvent signer les bilans en les déclarant exacts. Autrement, avec un contrôle d'Etat qui s'occupe des opérations de la Société, on arrive à créer des organisations qui ne sont plus, ni privées ni publiques, et qui se ressentent, en général, des maux des deux espèces, bien qu'en Pays privilégiés ils puissent en ressentir les avantages. Il vaudrait mieux alors arriver, tout simplement, à l'Assurance d'Etat ou, au moins, de la Municipalité, comme nous allons le faire en Italie pour certaines formes d'assurances. Il est évident que les mêmes précautions nécessaires pour les Sociétés d'Assurances doivent s'appliquer aux Sociétés de Secours Mutuels et le Gouvernement Italien n'accorde justement la reconnaissance juridique qu'aux Sociétés de Secours Mutuels qui peuvent prouver avoir leurs Statuts basés sur un fonds technique, rationnel.

The papers laid before the Congress show two principal tendencies; those demanding a far reaching supervision by the state and those demanding only a very restricted control. It is impossible to avoid all supervision. I am for restricted control. In fact, the essential difference between insurance companies and other commercial enterprises is solely in the calculation of the mathematical reserves and state supervision should be confined to the guarantee of the publicity and accuracy of the balance sheet and of the correct calculation of the reserves. It is not necessary, for this purpose, to adopt the American system that the state itself shall calculate the reserves of the companies. It would be sufficient to recognize officially the Actuarial Societies of all countries and to invest them with the requisite powers so that competent actuaries can sign the balance sheets declaring them to be correct. Or else, with a state control that concerns itself with the operations of the company, organizations come to be created which are no longer either private or public, and which, as a general thing, feel the effects of the evils of both kinds, although in privileged countries they may experience the advantages. It would then be preferable simply to adopt insurance by the state or, at least, by the municipality, as we are going to do in Italy for certain forms of insurance. It stands to reason that the same precautions that are required for the insurance companies must be applied to the mutual relief societies, and the Italian government justly accords legal recognition only to those mutual relief societies that can prove their statutes to be based upon a rational technical ground.

MR. FRITZ TREFZER (Switzerland) :—

Ich will mir einige Bemerkungen erlauben zu dem Aufsatz des Herrn Chis-

I take the liberty to make a few comments upon the paper of Mr. Chisholm,

holm, insbesondere bezueglich seiner Ausfuehrungen ueber die Staatsaufsicht in der Schweiz. Herr Chisholm hat von seinem Standpunkt aus die Schweizer Staatsaufsicht kritisiert, und wir sind ihm dafuer dankbar. Ich will gleich jetzt bemerken, dass die Schweizer Staatsaufsicht weit davon entfernt ist, die Beihuelfe der Techniker, der Aktuare, abzulehnen; im Gegenteil, wir suchen die Verbindung mit der Versicherungstechnik auf,—welches ja die einzige Art ist, wie die Theorie mit der aktiven Praxis in Verbindung bleiben kann.

Ich kann natuerlich nur wenige Punkte aus der Arbeit des Herrn Chisholm herausheben. Der eine Punkt ist der Umstand, dass er die Berichte des schweizerischen Versicherungsamtes zum Ausgangspunkt seiner Kritik gemacht hat. Nun aber besteht die Staatsaufsicht in der Schweiz nicht blos darin, dass das Versicherungsamt solche Berichte schreibt; diese Berichterstattung gibt nur ueber einen kleinen Teil der Staatsaufsicht Auskunft. Im Laufe des Jahres besteht unsere Taetigkeit in zahllosen Berechnungen, Untersuchungen und Auskunfterteilung in versicherungstechnischen Fragen. Diese koennen aus naheliegenden Gruenden,—da sie meistenteils die eine oder die andere Lebensversicherungs-Gesellschaft betreffen, nicht in diesen Berichten enthalten sein. Daher musste Herrn Chisholms Kritik notwendiger Weise etwas einseitig ausfallen.

Dann kommen die Tabellen als Punkt zwei. Herr Chisholm kritisiert auch diese Tabellen ziemlich einseitig, obgleich ich persoenlich nicht anstehe, seine Ausstellungen fuer gerechtfertigt zu erklaeren, und ich will mich bestreben,—und ich hoffe dass es mir gelingen wird,—seinen Ausstellungen Rechnung zu tragen. Freilich Herr Chisholm behauptet auch, dass die zahlreichen von uns publizierten Tabellen nur dazu dienen das Publikum zu verwirren: wenn wir nun den bisherigen Tabellen auf seine Anregung noch eine neue hinzufuegen, so setzen wir uns diesem Vorwurf nur um so mehr aus;—aber der Versuch soll nichtsdestoweniger gemacht werden.

especially as regards his remarks about state supervision in Switzerland. Mr. Chisholm has criticized the Swiss state supervision from his point of view and we are obliged to him for it. I want to remark right here that the Swiss state supervision is far from declining the assistance of the expert, the actuary; on the contrary, we seek an alliance with the technical side of insurance, which is surely the only way to maintain connection between theory and actual practice.

I can, of course, notice only a few points in the paper of Mr. Chisholm. One is the fact that he made the reports of the Swiss Bureau of Insurance the point of departure for his criticism. Now, state supervision in Switzerland does not consist merely in the writing of such reports by the Bureau of Insurance; these reports give information in regard to only a small part of the work of supervision. In the course of the year our activities cover innumerable calculations, investigations and the giving of information in technical matters. These, for obvious reasons, since they mostly concern one or another life insurance company, cannot be included in the reports. Therefore Mr. Chisholm's criticism is necessarily rather biased.

The tables are point number two. Mr. Chisholm criticizes these tables also from one side, although I do not hesitate, personally, to declare his objections to be justified, and I shall endeavor, and I hope I shall succeed, to take his objections into account. To be sure, Mr. Chisholm also asserts that the numerous tables published by us only serve to confuse the public; if, upon his suggestion, we now add a new one to the tables hitherto existing, we lay ourselves open to this censure all the more; but the attempt shall, nevertheless, be made.

MR. KOTARO SCHIDA (Japan):—

I have made out a brief report on the laws for the regulation of life companies in Japan, as follows:

According to the Fifth Article of the Imperial Ordinance, No. 380, thirty-third year of Meiji, life insurance is recognized as mentioned in the following articles:

First, that the sum of one hundred thousand Yen, fifty thousand dollars, shall be deposited in the Yokohama private treasury by the 31st of October of the thirty-sixth year of Meiji (1903). In case the amount of the liability, calculated at the end of the preceding fiscal year, under the contracts made in Japan exceeds the above mentioned amount, the sum equal to that liability shall be deposited.

Secondly, in case the amount of liability, calculated at the end of every future fiscal year, under the contracts made in Japan exceeds the amount deposited, a sum equal to the excess shall be deposited in the treasury within four months of the beginning of the next fiscal year.

Thirdly, when the deposit has been made according to the above two articles, the receipt of the deposit shall be notified, without delay, to the Minister of Commerce.

I regret to state the following facts which induced our government to adopt measures for the regulation of foreign companies:

First, that the agents of the foreign companies in Japan are not as reliable as the case requires.

Secondly, abuses in the methods of canvassing, and defects in the medical examinations.

Thirdly, a want of compliance with existing law, on the part of the foreign companies, in the duty of making reports.

Fourthly, the fear on the part of the Japanese Government as to the withdrawal of foreign funds from Japan.

The recent order contains no regulations as to the method of making the deposit, but the law states that a deposit in cash shall be generally required. Still the Minister of Commerce has the power to allow the deposit to be made in certain securities. On this point our legislation is like the law of Massachusetts.

HON. JAMES R. GARFIELD (United States):—

The discussion this afternoon is of very great importance to the new Bureau of Corporations, of which I am the Commissioner, as that has to do with the gathering of information regarding insurance companies in the United States. This, of course, is a new departure, as most of you may know, in legislation along these lines. The legislation of this country, so far as it has affected insurance, has been wholly within state lines, but at the last session of Congress a Bureau of Corporations in the Department of Commerce was organized, and one of its duties is that of the collection of useful information regarding insurance companies.

Your discussion this afternoon on the question of publicity involved directly the powers that are to be exercised by that Bureau, and I think that the mere meeting of an association of this kind is in itself one of the best arguments that one can have for publicity.

The nations of the world are no longer dealing merely as individual nations, nor are the companies in those nations dealing as isolated organizations, but we are working together for the purpose of evolving that which is the best for the greatest number; and in this work of in-

surance, national lines are thrown down. You gentlemen are working together to find what is the very best system that may be made; how the best results can be obtained. That is publicity in its broadest and its best sense, by the interchange of thought, by the interchange of idea, by the interchange of experience and results.

The new Department of Commerce has announced no policy. It occupies the position of the student. We are endeavoring to find out what conditions exist. We are endeavoring to obtain facts; the discussions which you are having here now, the papers that have been read, afford us the information which we are seeking in the very best possible way, because it comes from men who are trained in this particular work, men who have devoted their lives to its development.

As I said, it is not my purpose to in any way suggest any policy that the Bureau of Corporations may have. We wish the hearty co-operation of all kinds of business with which we will come in touch. Insurance is specifically named. The work of insurance is enormous, touching as it does almost everybody, man, woman and child. The Bureau of Corporations in the Department, under the Secretary, bespeaks your most active and hearty co-operation in the study now being given to this question.

Mr. J. G. Van Cise (United States) :—

There is scarcely any question that is of more interest to American companies than that of state supervision. We have to make reports to forty-five state departments in this country (unless some companies do not do business in all the states, but many do business in all of them, or nearly all of them), and they require official sworn reports every year. Those companies that do business in foreign countries have to make reports to many of those countries also.

I entirely believe in State supervision, but I think the pendulum has swung in the United States from one direction, too far in the other—from that of no supervision at all, to too much supervision. I think it has taken the form of inquisitorial legislation in the United States and in other countries—that a vast amount of information is asked for which is of no practical use, and which requires an immense amount of labor for the companies to furnish.

I think supervision should be limited to publicity and solvency of companies and the suppression of deception or fraud, and that is as far as supervision should go. Having accomplished that, it has accomplished all that is necessary and desirable for the public.

There is one point which I think is especially evil, as connected with supervision. That is, dictation to the companies as to how they shall treat their surplus. That is done in some countries. Surplus is, of course, always more or less an uncertain quantity, and the division of it, in my judgment, should be left entirely to the officers and managers of the companies. I think this is an interference with the right of private contract, and that it savors too much of what we call paternalism.

I think the value of the discussion of this question lies in an endeavor to have different countries accept the official reports coming from the authorities of the state or country where a particular company is located, and, if that company is respectable and responsible, to have its report accepted by any other state or country in which the company does business. The special point is that, if an American company's report is satisfactory to the authorities of the state in which it is located, it should be accepted as satisfactory in the European countries where that company

desires to do business, and reciprocally, if a foreign company wishes to do business in the United States, and its condition is satisfactory to its own government, its report should be accepted also by the state or government on this side.

As I have said, this is a very broad and comprehensive question and one that should be well discussed here; as I have stated before, I think that many of the present reports required are inquisitorial in their nature, requiring an immense amount of information which entails great expense upon the companies that have to prepare it, and which is of no practical value whatever.

Mr. Rufus W. Weeks (United States):—

I should like to present briefly by way of suggestion a very simple and elementary view of the true relation of government to life insurance.

All questions as to the conduct of any institution have to do, in their essence, with only one real thing, and that is, *human welfare* in the days and years to come—by which I mean the welfare of individual human beings one by one. Abstract principles and ideals have no value and no claim to be obeyed except as they can be shown to promote this one concrete reality.

The persons with whose welfare life insurance is concerned are those among the people who are to become, in the future, widows and orphans. The measure of merit in life insurance is two-fold: first, that it shall make absolute the security of the assured widow and orphan; and, second, that it shall extend its protection to the greatest possible number of those who may become widows and orphans in the future. These two are the only primary marks of true success in life insurance. All other considerations are secondary, and secondary at a long remove; indeed, they have their chief importance in their bearing upon the two primary considerations.

Our tastes or distastes as to business methods, our fondness for being unhampered, our attachment to old formulas of non-interference: all these, weighty as they seem to us, are really but as the dust of the balance. For against them is to be weighed certain solid realities—the comfort or the anguish which will certainly come to innumerable bereaved ones in the future, according as life insurance does or does not steadily do its work in the safest way possible, and in the widest way possible.

Looking upon the system of private business corporations in general as a kind of mechanism of industry, I find that it has one peculiar feature, which is this: the mechanism is not constructed with the direct intention of producing that object for which it really exists. The true ground of existence of a corporation is that it produces and distributes some commodity which satisfies a need of mankind; but the corporation is not constructed and run with the direct intention of fulfilling this object—it is constructed and run with the direct intention of producing profit for its owners. Incidentally and as a means of producing profit to the owners, it does generally create and in a manner distribute a needed commodity. This indirectness of mechanism is true of life insurance as well as of all other kinds of industry carried on by private corporations.

There is another "mechanism of mankind," so to speak, besides that of private corporations. It is expressed by the word "government," and this mechanism has two peculiar features. First, that it is indestructible —the personnel of government is incessantly changing; the laws and

constitutions are changing, but government itself endures in perpetuity. The second peculiarity of government is, that its several parts normally act directly for the real objects of their existence. The contrast of the private corporation with the department of government in this respect can be illustrated by comparing the duty of the employee of a corporation with the duty of the public school teacher. It is the primary duty of the employee of the corporation to make profit for his employers. Obeying that duty he does generally aid in the production and partial distribution of some needed commodity, but that is not his direct function. The public school teacher, on the other hand, has for his primary duty the instruction of the children under his care; there is no one for whom he is obliged to make profit.

If a mechanism constructed and run for one purpose does for a certain time fulfill another purpose, that may be looked upon as a sort of happy accident and hardly to be depended upon as an absolutely permanent state. If, for example, in a country like Great Britain, owing to certain peculiar virtues of race and of long established mercantile habit, life insurance has for a generation been carried on by competing private corporations, unhampered by supervision or control, and yet has fulfilled its real function satisfactorily, it is not a safe inference that the same happy result can be depended on in other countries, or even in Great Britain itself in the centuries to come.

To obtain the absolute security for the future which the human institution of life insurance demands, an alliance must be had with that peculiar institution existing among mankind which has the two qualities of perpetuity and directness of action. A line of action which is agreed upon by two parties—one of them actuated by the kind of conscience which is normal to men in private business, and the other actuated by the kind of conscience which is normal to men in public office—gives a better guarantee for the long future than a line of action decided upon by the former class of men alone. For example, the linking of life insurance with government can be and has been in some countries so effected as to add to insurance the element of absolute future solvency otherwise not attained.

From the point of view thus set forth it appears that no hard and fast line can be drawn, limiting the field of activity of government in relation to life insurance, and that the life insurance institution ought to welcome the co-activity of the institution of government in the field of life insurance to the widest extent to which it may be offered.

I venture to present this modern view of the true relation of the state to life insurance, not in the hope of persuading to it any of those who hold the opposite doctrine, the Spencerian doctrine of non-interference; it is not likely that they will be disturbed in their well-established belief. I offer it mainly to the young men, as one of the many items of thought which must make them see that Manchesterism in life insurance, while a doctrine intellectually respectable, is not a matter-of-course, but that the rival doctrine has also a good standing in the court of reason and conscience.

Mr. T. B. Macaulay (Canada):—

I desire to emphasize the distinction between two things that are often confused. I refer to the basis which a company may adopt for the valuation of its policies for its own purposes and the basis which may be

adopted for the valuation of the policies of that same company by the government for governmental purposes.

It is distinctly wise for any company to adopt a very stringent basis of valuation for its own purposes, and to make its position secure by strengthening its reserves even if it be necessary to diminish the profits which it would otherwise pay to its policy holders. Strength is the first thing to be considered. If, however, from these premises, it be argued that it is desirable that the government should establish an equally stringent basis of valuation, a great error will be made. The two things are essentially distinct, and a basis which may be highly desirable and commendable on the part of a company may be mischievous and highly objectionable if adopted by a government.

The reason why a life assurance company should adopt a stringent basis of valuation, or in other words a strong table of mortality and low rate of interest, is that it should provide a margin beyond the bare requirements of safety, or in other words, beyond the actual solvency line. But if the government should require a similar basis, it would make that a test of solvency, and that is another matter entirely.

If a bank be desirous of strengthening itself it puts aside a large reserve or surplus which can be drawn upon in case of necessity. If, however, the legislature were to make a law by which every bank would be required to have a similar reserve or be declared insolvent, almost the whole benefit of reserve would be lost. Yet that is exactly what is done when the government exacts a more severe test of solvency for life companies than is really required. It at once changes what is surplus into liability, and makes what should be a strength a weakness and a danger to the company. And yet, those two things—the basis of valuation to be voluntarily adopted by the companies, and the basis to be established by the government—are being continually confused, and we hear people saying that because most life companies adopt a high standard the government also should adopt a high standard.

There was never a greater fallacy. I wish to emphasize the fact that it is in the highest degree unwise for a government to adopt an unduly severe standard of solvency. It is a terrible thing to put a life company into insolvency, and the test should certainly be made no more severe than is really necessary.

It would be quite proper for the law to establish a comparatively mild basis of solvency, and to further provide that every company should set aside a margin of so many per cent. beyond the requirements of that basis before distributing any profits to its policy holders or shareholders. The companies could also be encouraged to set aside heavier reserves by having a table of honor in every government report, showing which companies had gone beyond the actual requirements of the law, and to what extent. They should be encouraged to go as much beyond it as possible, but it should not be made a question of insolvency if they do not do so. Let us have a real and true standard of solvency and not an artificially high one.

Mr. Robert San Galli (Russia) :—

J'estime que toute société sérieuse d'assurance vie ne peut que souhaiter un contrôle minutieux de la part de l'etat sur les sociétés d'assurance sur la vie. Il va de soi que pour être efficace,

I think that every life insurance company cannot but desire a minute control of life insurance companies on the part of the government. It goes without saying that, in order to be effica-

ce contrôle doit être exercé par des fonctionnaires compétents et éclairés, sans entraver en quoique ça soit la marche des affaires. Un contrôle de l'Etat, exercé dans ces conditions, ne peut que favoriser la propagation de l'idée générale de l'assurance sur la vie, puisque le fait seul que l'Etat juge nécessaire d'intervenir parle en faveur de l'importance capitale de l'assurance sur la vie et que, en outre, il donne aux assurés la certitude que leurs économies seront gérées avec prudence et pleinement sauvegardées. Le contrôle de l'Etat rend presque impossible la création de sociétés d'assurance peu solides, c'est pourquoi l'eventualité de la liquidation d'une société d'assurance à la suite de pertes éprouvées ne peut, pour ainsi dire, pas se produire. Or, il est inutile d'insister sur le tort que causerait à l'idée de l'assurance-vie la liquidation d'une société qui aurait pour conséquence la perte partielle ou totale des épargnes des assurés.

cious, such control must be exercised by competent and enlightened functionaries, without in any respect impeding the progress of business. A governmental control, exercised under such conditions, can only favor the progress of the general idea of life insurance, since the mere fact that the government deems it necessary to intervene, speaks in favor of the supreme importance of life insurance and moreover gives to the insured the certainty that their savings will be administered with prudence and fully protected.

State control renders the creation of unreliable insurance companies almost impossible, wherefore the possibility of the liquidation of an insurance company in consequence of losses sustained cannot, so to speak, take place. It is unnecessary to dwell upon the detriment which would be caused to the idea of life insurance by the liquidation of a society that would result in the partial or total loss of the savings of the insured.

MR. FRITZ ROSSELET (Switzerland) :—

J'ai montré dans mon rapport, que la loi Fédérale de surveillance de 1885 est applicable à toutes les Sociétés d'Assurances opérant en Suisse, à l'exception des petites Caisses de Secours Mutuels et des Caisses Cantonales, et que la surveillance doit s'exercer d'une même manière sur les Sociétés Suisses et sur les Sociétés étrangères.

La Suisse, pour sauvegarder les intérêts publics en matière d'assurance, a adopté le système de la surveillance par un collège d'experts, prétendant que dans le domaine des assurances sur la Vie, l'Etat doit se substituer au citoyen pour étudier la question, trop difficile et complexe pour ce dernier, de savoir si une Société d'Assurance sur la Vie est solvable.

Cette question de solvabilité est celle qui l'intéresse avant tout. Pour l'examiner, la loi a institué le système de l'autorisation préalable précédée d'une expertise technique, approfondie, et suivie d'un contrôle permanent par l'autorité de surveillance. Le fait que,

In my report I have shown that the Federal law of supervision of 1885 applies to all the insurance companies doing business in Switzerland, with the exception of the small Mutual Relief Societies and the Cantonal Institutions, and that supervision must be exercised in like manner over the Swiss and over the foreign companies.

Switzerland, in order to protect the public interests in insurance matters, has adopted the system of supervision by a board of experts, holding that in the domain of life insurance the state should supersede the citizen for the purpose of studying the question, too difficult and complex for the latter, of whether an insurance company is solvent.

This question of solvency is that in which the state is, above all, interested. For its examination the law has established the system of previous authorization preceded by a thorough technical examination and followed by a permanent control by the supervising

jusqu'ici, la concession a été accordée seulement pour un temps limité, ne change rien au principe même de la concession.

Les Sociétés doivent soumettre au Conseil Fédéral, tous les ans, un rapport détaillé sur leur situation présente et faire approuver toutes combinaisons ou méthodes nouvelles et toutes modifications apportées à leur situation antérieure.

Pour être reconnue solvables, les Sociétés d'Assurances sur la Vie doivent répondre à certaines conditions qui ne sont fixées, ni dans la loi, ni dans un règlement d'exécution, ni même dans un arrêté de l'autorité exécutive. Le Conseil Fédéral, assisté de son Bureau des Assurances, a pleine liberté pour apprécier les garanties de solvabilité des sociétés et, pour cela, il se base sur les données les plus récentes de la science. Il apprécie l'ensemble des garanties, mais tient, néanmoins, à ce que les réserves mathématiques soient évaluées suivant des principes corrects et sur des bases aussi convenables que possible.

Si une Société n'offre plus les garanties nécéssaires, le Conseil Fédéral lui retire la concession. Il n'y a pas d'instance de recours contre les décisions du Conseil Fédéral.

Le législateur Suisse a estimé que le mode de surveillance qu'il instituait, devait suffire sans qu'il soit besoin d'exiger des Sociétés le dépôt d'un cautionnement s'élevant à la valeur des engagements résultant des contrats d'assurances. Ce cautionnement constituant un privilège pour une classe d'assurés est contraire au principe de l'unité des Sociétés et peut être très gênant pour ces dernières. La Suisse ne demande qu'un faible cautionnement que le Conseil Fédéral fixe à Frs. 100,000 et qui est un gage surtout pour l'autorité de surveillance.

Chaque année le Conseil Fédéral rend compte de sa gestion et de ses principes de surveillance, et expose la situation des Sociétés qu'il surveille, dans un rapport spécial dont la publication est prévue par la loi. Il ne faut pas confondre, toutefois, cette publicité avec celle qui, ailleurs, constitue à elle seule à peu près toute la surveillance officielle à laquelle

authority. The fact that, heretofore, the concession was accorded only for a limited term, does not alter the principle itself of the concession.

The companies must submit to the Federal Council, every year, a detailed report of their present status and cause to be approved all new combinations and methods and all modifications applied to their previous condition.

To be recognized as solvent, the life insurance companies must comply with certain conditions which are fixed neither by law nor by an executive regulation, nor even by a decision of the executive authority. The Federal Council, assisted by its Insurance Bureau, has perfect liberty in estimating the guarantees of solvency of the companies and, for this purpose, takes as a basis the most recent scientific data. It values the whole of the guarantees, but desires, nevertheless, to have the mathematical reserves estimated according to correct principles and on bases as suitable as possible.

When a company no longer offers the necessary guarantees, the Federal Council withdraws the concession. There is no authority for appeal against the decisions of the Federal Council.

The Swiss legislators have considered the mode of supervision, which they established, sufficient without considering it necessary to exact of the companies the deposit of a security amounting to the value of the liabilities under the insurance contracts. This security, constituting a privilege for one class of insured, is contrary to the principle of the homogeneity of the companies and may prove very troublesome to them. Switzerland requires only a small security, fixed by the Federal Council at fcs. 100,000, which is a recognition especially of the supervising authority.

Every year the Federal Council gives an account of its management and its principles of supervision and sets forth the status of the companies which it superintends in a special report provided by law. This public report must, however, not be confounded with that which in other countries constitutes in itself about all the official supervision

sont soumises les sociétés. Dans un pays où toute l'administration publique se fait au grand jour, le Rapport du Bureau Fédéral des Assurances est le complément nécessaire de la surveillance gouvernementale et, en outre, il doit renseigner le public, l'instruire, et lui aider à choisir *parmi de bonnes sociétés*.

La critique que l'on peut faire au sujet du contrôle de l'actif des lois d'assurances, s'adresse moins à notre mode de surveillance, qu'à l'exécution de la surveillance par le Gouvernement Fédéral, car la loi Suisse donne bien à l'Autorité Gouvernementale toute compétence pour contrôler l'actif tout entier.

En pratique, il est difficile d'y arriver d'une manière aussi complète qu'on le désire. Il faut, pour cela, un service d'inspection mieux établi que celui qui existe actuellement au Bureau Fédéral des Assurances. Il faudrait des experts de plus et contrôler sur place, au siège même des compagnies tous les postes de l'actif, hypothèques, prêts sur nantisement, immeubles, titres mobiliers, effets usufruits et nues propriétés, prêts sur polices, etc., afin de se rendre compte que la contrevaleur du passif existe bien réellement.

Le Bureau Fédéral des Assurances, comme bien des Institutions, est loin d'être sans imperfection, et il fait son mea culpa, mais il a quelques circonstances atténuantes. Le contrôle du passif était pour lui la question de beaucoup la plus importante, et c'est à l'étude de cette question qu'il s'est voué en premier lieu. Il a pensé que le contrôle de l'actif pouvait, en attendant, se faire grosso modo, sans entrer dans beaucoup de détails. Il a pensé que le même esprit qui poussait une Société à se reconnaître un fort passif devait aussi l'engager à posséder un actif d'une valeur équivalente. L'absence de cet esprit se fait déjà remarquer dans l'établissement des réserves de toute nature. Au reste, quand il a des doutes, le Bureau Fédéral des Assurances procède à un examen détaillé et minutieux de l'actif. On peut dire, en outre, qu'une majoration indue de l'actif se fait bien-

towhich the companies are subjected. In a country where the entire public administration is carried on in broad daylight, the report of the Federal Bureau of Insurances is the necessary complement to governmental supervision and, besides, is to inform and instruct the public and aid it in selecting from *among good companies*.

The criticism that may be made on the subject of the control of assets under the insurance law is directed, not so much against our mode of supervision, as against the exercise of such supervision by the Federal government, for the Swiss law fully grants to the government authorities all power of control over the entire assets.

In practice it is difficult to attain this end as completely as may be desired. For this purpose a more thorough system of inspection is required than that in existence at present in the Federal Bureau of Insurances. It would require more experts, and local supervision in the very offices of the companies, of all assets, mortgages, loans on securities, real estate, personal property, loans on policies, etc., in order to be satisfied that the values offsetting the liabilities really exist.

The Federal Bureau of Insurances, like many other institutions, is far from being perfect, and it confesses its shortcomings, but there are extenuating circumstances. The supervision of liabilities was by far the most important question, to the study of which the Bureau applied itself in the first instance. It was thought that the supervision of the assets could, in the meanwhile, be made "grosso modo" without entering into many details. It was thought that the same spirit which impelled a company to incur large liabilities must also induce it to be in possession of equivalent assets. The absence of that spirit is noticeable in the formation of all kinds of reserves. It results that, if in doubt, the Federal Bureau of Insurances proceeds to make a detailed and minute examination of the assets. It may be said, moreover, that an over-valuation of the assets soon becomes noticeable by comparing

tôt remarquer par la comparaison de l'actif placé à intérêt et du produit d'intérêts des actifs.

Comme je l'ai déjà dit dans mon Rapport, le Bureau de Berne ne fait guère que sortir de l'enfance malgré ses 17 ans d'âge. Il a reconnu qu'il est bon de surveiller de près aussi la valeur de l'actif et, selon toute vraisemblance, un premier changement d'organisation du bureau de surveillance consistera à introduire le système d'inspection sur place, ou, si l'on veut, à le développer, attendu que, déjà maintenant, je le répète, ce système existe, mais à l'état rudimentaire.

the interest-bearing assets with the interest resulting from such assets.

As I have already stated in my report, the Bureau at Berne has barely emerged from infancy, notwithstanding its 17 years of age. It has come to understand that it is well to watch closely over the value of the assets, and in all probability the next change in the organization of the bureau of supervision will consist in introducing the system of local inspection, or, if desired, in developing it, considering that, I repeat, such system already exists, if only in a rudimentary state.

Mr. Howell W. St. John (United States) :—

It seems to me that the evils, actual and potential, against which Dr. Lewis has so eloquently protested, are rather legislative than administrative in their character. I think their origin lies not in the operation of state insurance supervision as adopted in the several state departments, but is to be found in the statutes of restrictive legislation which have been enacted by forty or more separate political sovereignties. These are part, it seems to me, of the cost of popular government.

Mr. James Chisholm (Great Britain) :—

I expected to be criticised in this country, where state supervision is so much in vogue, for having attacked it as I have done in the paper that I have submitted to the Congress, but I am constrained by the remarks of Dr. Lewis to say a word or two in defence of the principle of state supervision.

It struck me that Dr. Lewis' remarks, if I understood them aright, rather went too far. He seemed to speak against state supervision on two grounds, the first being that officials can not be trusted. But that seems to be a criticism that, if followed out logically, would lead to the abolition of all officials. It is not a question of trusting the officials. We hope, and we start with the idea, that we can trust every one. It is a question of the duties that you entrust to officials to carry out. My belief is that if state supervision errs at all, it is through giving the officials duties to perform which they are not competent to carry out.

The second ground of objection raised by Dr. Lewis is this, that there is no necessity for state supervision of life insurance. The state had no concern with the business. I have always understood that, in civilized countries, it is the province of the state to look after the lives and property of its citizens. For instance, in order that we may not happen to be killed on the railway through an accident, the state takes care that the chances of accident on the railway are reduced to a minimum by legislation adapted to insure the proper management of railways. If the state, while thus indulging in the supervision of railway management, disclaims any responsibility for the solvency of insurance companies and for the sufficiency of the provision for the widow and orphans of those who, for instance, may be killed in railway accidents,

the situation becomes most serious and illogical; for the assured welfare of a dependent family is surely a more vital matter to the state than the care of the life of a single citizen. Those are the grounds on which I cannot possibly agree with Dr. Lewis.

But so far as regards supervision, as carried on in the United States, I am heartily with him in deprecating it. I need only refer to the paper in which I have indicated the grounds and submitted the reasons. I have indicated, with illustrations from the bureaus of the United States and of Switzerland, France and other countries, sources of weakness and of difficulties in carrying out state supervision and its duties.

Mr. Charlton T. Lewis (United States) :—

I wish to say that, having been silenced by inexorable time before I had the opportunity to unravel my first broad, and perhaps rather unguarded, statements, Mr. Chisholm very naturally misunderstood me.

I had no intention of opposing all supervision and control of life insurance any more than all supervision and control of other human interests. But I intended to prove, and I think it can be easily proved, that on any principles of sound government, the same administrative and legislative power, the same legal principles or right and the same courts of justice are perfectly competent to superintend the efficient performance of the insurance contract as well as all other contracts, and that the special pleas which are made for the peculiar, minute and universal control by government of life insurance, have no real force whatever, but would be equally applicable to every other power and right to contract on the part of private citizens.

Dr. James Raffmann (Hungary) :—

Sie wissen dass in der allernaechsten Zeit dem ungarischen Parlament ein Gesetz ueber die Staatsaufsicht zur Annahme vorgelegt werden soll, und ich will mir erlauben, die Prinzipien dieses Gesetzes hier kurz anzudeuten. Die Staatsaufsicht soll nur so weit gehen, als die Sicherheit der Versicherten es unbedingt erfordert, und es soll alles vermieden werden, was die Versicherungsgesellschaften in ihrer Entwickelung irgendwie zu stoeren geeignet ist. Der ungarische Handelsminister betrachtet nun diesen Kongress, beschickt von Staats- und Privat-Aktuaren, als besonders geeignet fuer die Normierung internationaler Usancen in der Art der Berechnung und Anlage der Reserven, sowie Aufstellung der Bilanzen. Er will also nicht mehr, aber auch nicht weniger als Ihr Mitarbeiter sein, meine Herren. Er hat in schweren politischen Zeitverhaeltnissen, in Zeiten schwerer politischer Aktionen mit dem In- und Ausland sich auch mit Ihnen beschaeftigt, und sich stundenlang mit mir

You know that, in the very near future, a bill for state supervision is to be submitted to the Hungarian Parliament for ratification, and I take the liberty of briefly indicating here the principles of that bill. Supervision by the state is to extend only so far as the security of the insured absolutely requires and everything that is apt to disturb the insurance companies in their development is to be avoided. The Hungarian Minister of Commerce considers this Congress, attended by state and private actuaries, particularly fitted for the establishment of international usages in the method of calculation and investment of reserves as well as in that of drawing up the balance sheets. He wishes, therefore, to be no more but neither less than your collaborator. Under difficult political conditions, in times of serious political engagements, domestic and foreign, he has also occupied himself with you, and discussed with me the subject of this Congress. He learned only lately of the imminent

ueber den Gegenstand unterhalten. Er erfuhr erst sehr spaet von der Abhaltung des Kongresses; er freute sich, dass ich bereits eine Einladung zu demselben von dem Comité Permanent erhalten hatte; und er hat mich mit dem offiziellen Auftrag beehrt, hierher zu gehen, zu hoeren, zu sehen und zu studieren; sowie von meinen Beobachtungen den hohen Beamten seines Ministeriums Bericht zu erstatten, um dadurch Material zu bringen zu dem Gesetz ueber die Staatsaufsicht, das jetzt passiert werden soll, und um den vortragenden Raeten in dieser Beziehung an die Hand zu gehen.

Ich bringe Ihnen die Gruesse des Ministers, nicht nur als Excellenz eines Staates, wo viele von Ihnen geschaeftlich interessiert und verpflichtet sind, sondern die Gruesse des Nationaloekonomen und Statistikers,—und in dieser Beziehung die Gruesse eines Genossen an seine "fellow craftsmen."

convening of the Congress; he was glad to hear that I had already received an invitation from the Permanent Committee, and he has honored me with his official commission to come here, to hear and to see and to study, as well as to make a report of my observations to the high officials of his ministry, thereby to procure material for the bill on State supervision which is about to be passed, and to lend a helping hand, in this respect, to the reporting councillors.

I bring to you the greetings of the minister, not only as the dignitary of a State, in which many of you have business interests and obligations, but the greetings of the political economist and statistician, and in this respect the greetings of an associate to his "fellow craftsmen."

Mr. Robert G. Hann (United States):—

The successful management of life insurance is of such momentous import to the individual, family and community, that the State should draw around it those safeguards that may be deemed adequate to strengthen and preserve the business.

Since the State creates the corporation and endows it with the authority to transact business defined by its charter or articles of association, it surely should have some responsibility in taking reasonable measures that a proper account of the companies' stewardship is rendered the assured at regular intervals. It is no doubt a misfortune that legislation in connection with this all important and sacred trust, at least in this country, has thus far been controlled largely by party politics which has also made its influence felt in the insurance departments.

Still it must be admitted that state supervision at least in New York and Massachusetts has been conducted and carried out with far more regard to the real principles of the business and therefore to the interests of the assured, than in many other territories. Other states are doing well in this direction. It is to be deplored that thoughtless and inconsiderate measures are at times launched entailing only expense and embarrassment in conforming to the same; in fact these can only be complied with by either the surrender of rights conferred upon the directors, or if these are to be regarded, by withdrawal from the territory.

As a general principle, that supervision is the best which leaves freedom of action to the company in the management of its internal affairs and that will foster and encourage the assured to take an interest in its own affairs, thereby avoiding the mischievous and disappointing policy of training the public to lean wholly upon the state.

The blanks furnished by the different governments should be clear, concise and as simple as possible, with a view to bring before the assured

a clean cut statement of the affairs of the offices so that a child that runs may read. They should also be as free from change as possible, in order that the offices may be in a position to readily furnish the information called for without serious embarrassment to the proper care of their business.

The bases on which premiums are computed vary with a few of the offices; there is not so much similarity in this respect in Great Britain as in the United States. The proper officers of companies, however, should be considered the best arbiters of the elements to be chosen for valuation. The adoption of a standard measure, however, for mere comparison, below which the aggregate valuation should not fall, will subserve a useful purpose; without this precaution it is true that if an office in its valuation adopted an unsuitable rate of interest or mortality table, it would be known and competition could be safely left to take care of the rest. On no account should the standard suggested be considered a standard to show *where insolvency begins,* as it may not contain a single element suitable to the measure of the latter condition.

I take it that the function of the state should be confined to a watchful oversight that the liabilities are about what they profess to be, and that the assets claimed in the balance sheet are absolutely in possession at the date of report.

The state should have nothing to say concerning the distribution of profits, the securities that shall be held, and other such matters in which it is safe to affirm that governmental knowledge of these things is far inferior to that of the managers of the respective offices.

Supervision should be administered in the spirit of confidence rather than of suspicion; unnecessary burdens should not be placed upon the companies in the preparation of reports. If these principles are carried out there will be hearty co-operation on the part of the offices. If a management is honest, it will be greatly assisted by such supervision. If dishonest, all the legislation and administration you can devise will not make it so.

The success of our business lies in deserving the confidence of the public—this is the capital upon which we trade. If in the management of the sacred trust conferred upon us we adopt an unworthy policy, we are trusting to a rope of sand. The business will thrive best in the light. Trustworthy companies have nothing to fear from honest and unprejudiced state supervision, but they ought not to be hampered with conditions imposed by those who in many cases are antagonistic to the offices making the reports.

Uniformity of returns should be insisted on as far as possible; the time and labor of offices should be respected by those who have the power to call for returns. The reverse of this is bound to lead to utter failure in the object sought. In conclusion, I believe some supervision of insurance is necessary, and that we should be careful to avoid harsh and severe criticism of a sweeping nature when such is not justified.

Prof. James H. Gore (United States):—

I desire to speak upon this subject from a standpoint that does not seem to have been touched upon, and that is from the standpoint of the insured.

None of my figures have ever entered into the returns of an insurance company, nor have they ever fixed a single premium. I am merely known as a risk, by a certain number, in one of the companies, and

there designated by a card of a certain color on which the gratifying intelligence is made as to when I am expected to die. I am nothing more, therefore, than an insured person, and look upon this question from the standpoint of one who is insured.

What do we desire? What do we want? What sort of figures do we consider? When we go into the insurance we do so from our feeling of confidence in the particular company in which we invest, and when we read over the returns of the company from the report of the Superintendent of Insurance, we simply look at the figures with the same interest that we do over the returns of the bank in which we have our funds invested, or the company whose shares we possess. If, when I look over the report of the company in which I am insured, I see a statement that this particular company has fifty thousand dollars, for example, invested in Oklahoma Bonds, and understand that such is because there is a law in that particular territory which demands an investment of that character, my confidence is not strengthened thereby. I would much rather see in such a return an investment in the nature of a first mortgage bond on a valuable piece of property. Whenever an official, as a Superintendent of Insurance, takes to himself the power to determine the form of the investment that the company must make, I feel that that particular company is losing some of its legitimate rights. I cannot but feel that the officers of the company who are on the spot, who are interested in the work that they are carrying on, and whose funds, as well as whose reputations are at stake, are better judges of the form of the investment that the company must make than the officials a hundred or a thousand or more miles distant.

Life insurance, according to my opinion, is an investment. It differs from a savings bank, so far as the heirs are concerned, in a large measure, in that the bereaved family can draw upon the fund without waiting for the appointment of an administrator and the details of the settlement of an estate. But, after all, it is nothing but an investment that the wise father is making for his family, and the protection that should surround it is no more than the protection that should surround the investments similarly made for a similar purpose in a savings bank or in any incorporated concern.

If we have any doubt regarding the wisdom with which the companies make their investments, I would be glad if some of you would try the experience that I have tried on three occasions, in going before the insurance companies to ask them to make an investment in foreign bonds. We will then realize the care with which the officers of the company make the investment, much wiser than possibly could be done by a person a hundred or a thousand miles away.

Mr. Emory McClintock (United States):—

The obvious functions of state supervision are the eliciting of necessary information, the verification of the facts elicited whenever necessary, and the termination of the work in case the company becomes insolvent or is carrying on plans which must lead to insolvency. These points may be agreed upon. Beyond this, there is a tendency in some of the states of this country to prescribe by legislation specific features for the insurance contract, to declare that a company working in a given state must provide something for the policy holders which they do not have elsewhere, or must change its whole system to agree with the points specified in the laws of that state. For instance, one state will say that

you must pay every case of suicide at once, no matter how soon the man commits suicide after his insurance; another state will provide some other modification of the contract, and so on. This tendency leads towards confusion and chaos, and when carried to its conclusion, it must finally imply that no mutual company shall do business outside of the state which creates it.

I therefore protest against the provision by any state of requirements, peculiar to that state, affecting the policy contracts of mutual life insurance companies of other states.

MR. SAMUEL LOEWENBERG (Austria) :—

Sie muessen mir erlauben, zu diesem Punkt der Tagesordnung einige Bemerkungen zu machen, weil ich diesen Gegenstand fuer einen der wichtigsten und aktuellsten halte. Der Staatsaufsicht, —nachdem dieses Thema einmal durch die ganz ausgezeichnete Brochure des Herrn Kollegen Schevichaven angebahnt worden ist,—moechte ich hier nicht das Wort reden, gleichwie ich sie auch nicht als unbedingt notwendig anerkennen kann. Denn wir sehen ganze Laender, und zwar gerade die klassischen Laender der Lebensversicherung, welche ihrer bisher entbehrt haben, ohne dass durch dieses Fehlen der Staatsaufsicht wesentliche Nachteile zum Vorschein gekommen waeren. Wenn ich mich also nicht absolut gegen jede Staatsaufsicht ueber die Versicherungsanstalten ausspreche, und wenn ich ihr sogar die Eigenschaft und das Verdienst zuerkenne, dass sie das Pflichtbewusstsein der Versicherungsmaenner stets rege zu halten vermag;—so moechte ich doch vor zu weit gehender Ausdehnung der Staatsaufsicht hier eindringlichst mein Wort erheben.

Es ist jetzt so ziemlich ueberall Staatsaufsicht zu finden; zuerst hier in Amerika; und von da hat sie sich fortgepflanzt in fast alle Laender der Welt. Sie kam in die Schweiz, auch zu uns nach Oesterreich; dann nach Russland und nach Deutschland; jetzt ist sie dabei, auch die skandinavischen Laender zu ergreifen. Und dabei zeigt diese Staatsaufsicht stets die Tendenz zur Verschaerfung: mit jedem neuen, der Staatsaufsicht zugaenglich gemachten Land ist eine Verschaerfung ihrer Bestimmungen gegenueber der Versicherungsgesellschaften nicht zu verkennen, —nicht nur inbezug auf die Gestion,

You must permit me to make a few remarks on the order of the day, because I consider this subject to be one of the most important and vital. After the way has been paved through the excellent pamphlet of our colleague Schevichaven, I would not like to speak here in behalf of state supervision, nor can I acknowledge it to be absolutely necessary. For we see entire countries, and indeed the classic lands of life insurance, that have heretofore dispensed with it, without essential disadvantages having come to light through this lack of governmental control. If, therefore, I do not absolutely express any opposition to all state supervision over insurance companies, nay, if I acknowledge its quality and merit of always being able to keep alive the sense of moral obligation on the part of insurance men, yet I would most earnestly raise my voice here against too far reaching an extension of governmental control.

It is now to be met with almost everywhere; first here in America, and hence it has been transmitted to nearly all the countries of the world. It spread to Switzerland, also came to us in Austria, then to Russia and to Germany, and now it is on the point of seizing the Scandinavian countries. At the same time this governmental control constantly shows a tendency towards aggravation: with every new country made accessible to State supervision, new restriction has undeniably been added to the regulations governing the insurance companies,—not only with regard to the management, but also with regard to the annual reports, statements of account, etc. With us in Austria it has now come to the pass that perhaps

sondern auch inbezug auf die Vorschriften bezueglich der jaehrlichen Ausweise, Rechenschaftsberichte u. s. w. Es ist jetzt bei uns in Oesterreich so weit gekommen, dass vielleicht bei jeder Versicherungsgesellschaft gerade so viel Beamte, als noetig sind zur Aufrechterhaltung und Foerderung des aeusseren Betriebs, lediglich damit beschaeftigt werden muessen, um den zahllosen Anforderungen der Staatsaufsicht zu genuegen.

Das ist unhaltbar und schuettet das Kind mit dem Bade aus. Aber doch waere das nur ein untergeordnetes Moment: die Staatsaufsicht ist deshalb eigentlich so schwerwiegend und so stark eingreifend in den Organismus jeder einzelnen Versicherungsgesellschaft, weil sie in den verschiedenen Laendern eine verschiedene ist, sodass daraus fuer viele Versicherungsgesellschaften die Notwendigkeit erwaechst, fuer jedes Land, in welchem sie Geschaefte macht, eine andere Jahresbilanz anzufertigen. Was der eine Staat erlaubt oder vorschreibt, das verbietet der andere, und schliesslich ist selbst das System, ja das Resultat der Rechnungsablegung durch diese verschiedenartigen Vorschriften beeinflusst. Ich moechte Ihnen hierfuer nur kurz ein ganz praegnantes Beispiel anfuehren.

In Oesterreich gilt die Bestimmung, dass jede Gesellschaft ihre Wertpapiere zu dem Kurs in die Bilanz einzusetzen verpflichtet ist, welchen diese Papiere am 31. Dezember des Berichtsjahres haben. In Deutschland dagegen wird im Gegensatz hierzu verlangt, dass der Acquisitionswert der Papiere in die Bilanz einzustellen ist, mit der Beschraenkung aber, dass wenn der Kurswert am Tage des Abschlusses niedriger ist als dieser Acquisitionswert, der Tagewert in die Bilanz einzustellen ist. Wenn nun eine oesterreichische Gesellschaft auch in Deutschland Geschaefte macht, fuer Deutschland eine Bilanz aufstellen und sich den eben beruehrten Forderungen der Staatsaufsicht fuegen will, so bringt sie in dieser ihrer "deutschen" Bilanz ein ganz verschiedenes Resultat zur Welt, als dasjenige ihrer in Gemaessheit der oesterreichi-

in every insurance company just as many employees as are necessary for the maintenance and promotion of the external business must be employed exclusively in satisfying the countless demands on the part of the state control. That is an untenable situation and means, as the German adage has it, "pouring out the child with the bath!" Yet this, after all, is only of secondary moment; governmental control is really so searching into the organism of every insurance company, for the reason that it is different in different countries; from that fact arises the necessity for many insurance companies to strike an annual balance for each country in which it does business. What one state permits or prescribes the other prohibits, and finally the system itself, even the result of the rendering of accounts, is influenced by these heterogeneous regulation. I want to cite briefly quite a conspicuous example of this. In Austria the regulation demands that every company is obliged to enter its securities in the balance sheet at the market value on December 31st of the year reported. In Germany, on the other hand, it is required, in direct contrast with this, that the purchase value of the bonds be entered in the balance sheet, with the restriction, however, that if the market value on the day of balancing is lower than the purchase value, the former is to be entered in the balance sheet. Now, if an Austrian company does business also in Germany and wishes to strike a balance for Germany and to comply with the requirements just mentioned, it results in this, that its "German" balance is quite different from that arrived at in its balance made in conformity with the Austrian laws; the profit realized may be larger according to the one balance than according to the other, and vice versa—and the question then is, according to which law are the insured to be treated? As a fact, one insurance company was expected to treat its insured in Germany according to another method than that accorded to its Austrian policy holders, because the results of its reports as prescribed by the Ger-

schen Gesetze aufgestellten Bilanz; es kann nach der einen Bilanz der erzielte Gewinn ein groesserer sein als nach der anderen und umgekehrt,—und es fragt sich dann, nach welchem Recht die Versicherten zu behandeln sind. Ja, es ist einer Versicherungsgesellschaft in der Tat zugemutet worden, sie solle ihre Versicherten in Deutschland nach einem anderen Modus behandeln als ihre oesterreichischen, weil die Ergebnisse ihrer Rechenschaftsberichte nach den Vorschriften der deutschen Aufsichtsbehoerden von denen differierten, welche der nach oesterreichischem Recht erstattete Rechenschaftsbericht zeitigte.

Das ist etwas so krasses, dass ich mir erlaubt habe, Ihre spezielle Aufmerksamkeit auf diese Zustaende zu lenken.

Ich wollte nur die Anregung dazu gegeben haben, dass auf allen kuenftigen Kongressen stets dahin gewirkt werde, dass endlich eine internationale Regelung des Versicherungswesens inbezug auf die Rechnungslegung und die Beaufsichtigung der Versicherungsgesellschaften Platz greifen moege. Es ist dies das einzige Mittel, um die vielen Quaelereien zu beendigen, welchen die Versicherungsgesellschaften in den verschiedenen Laendern ihrer Taetigkeit ausgesetzt sind. Es wuerde mich sehr freuen, wenn diese meine Anregung nicht auf unfruchtbaren Boden fallen wuerde.

man boards of control differed from those obtained from the report made according to Austrian law. This is something so grossly inconsistent that I have taken the liberty of drawing your special attention to these conditions.

I wish to start the impulse towards an effort at all future Congresses, to the effect that an international regulation of the insurance business be adopted in regard to the rendering of accounts and the supervision of insurance companies. This seems the only way to put a stop to the many annoyances to which insurance companies are exposed in the various countries in which they do business. I should be very glad if my suggestion were not to fall upon unproductive ground.

Subject, *The Technical Principles which should be Observed in State Supervision.*

Papers.

Die Bedeutung des Prämienreservefonds nach dem deutschen Privatversicherungsgesetze, by Mr. Broecker of Germany.

Die allgemeinen technischen Grundsätze, welche bei der staatlichen Kontrolle der Lebensversicherungs-Anstalten im Hinblick auf die Internationalen Interessen des Versicherungswesens zu beachten sind, by Mr. Schönwiese of Germany.

Die technischen Grundsätze, welche bei der staatlichen Kontrolle zu beobachten sind, by Mr. Trefzer of Switzerland.

Dr. Hermann Broecker (Germany):—

Die von mir vorgelegte Arbeit ueber die Bedeutung des Praemienreservefonds nach dem deutschen Privatversicherungsgesetz zerfaellt in acht Abschnitte.

Der *erste* Abschnitt behandelt den

The treatise on the significance of the premium reserve fund according to the German private insurance law, submitted by me, is divided into eight sections.

Begriff der Praemienreserve fuer die verschiedenen Versicherungsarten. Die Praemienreserve ist gewissermassen als ein Guthaben der Versicherten—wenn auch nicht in streng rechtlichem Sinne —anzusehen.

Im *zweiten* Teil wird die in Deutschland uebliche Methode fuer die Einstellung der Praemienreserve in die Jahresbilanz besprochen.

Es folgt dann *drittens* eine Erlaeuterung der Bestimmungen des deutschen Privatversicherungsgesetzes ueber die Behandlung der Rückversicherungen. Das Gesetz bestimmt, dass das rueckversichernde Unternehmen die Praemienreserve selbst aufzubewahren und zu verwalten hat.

Der *vierte* Abschnitt handelt von der Aussonderung und Belegung der Praemienreserve, beziehungsweise von der Bildung des Praemien-Reservefonds. Die Forderung voelliger, koerperlicher Aussonderung der zur Deckung der Praemienreserve dienenden Vermoegensstuecke bildet eine Eigenart des deutschen Privatversicherungsgesetzes, welche sich meines Wissens in der Gesetzgebung anderer Staaten nicht findet.

Es wird sodann *fuenftens* das zur Eintragung der Bestaende des Praemien-Reservefonds dienende Register, fuer welches das Kaiserliche Aufsichtsamt fuer Privatversicherung in Berlin besondere Formulare vorgeschrieben hat, besprochen.

Im *sechsten* Teil gelangen die Bestimmungen des Gesetzes ueber das dem Versicherten in Hoehe seiner rechnungsmaessigen Praemienreserve zustehende Vorrecht fuer den Fall des Konkurses der Versicherungsgesellschaft zur Sprache.

Ein weiterer Abschnitt betrifft *siebentens* die im Gesetz besonders geregelten Verhaeltnisse der im deutschen Reich arbeitenden auswaertigen Versicherungsgesellschaften. Fuer diese Gesellschaften gelten die Vorschriften ueber den Praemien-Reservefond nur hinsichtlich der im Inland abgeschlossenen Versicherungen.

Den Schluss bildet *achtens* die Betrachtung der fuer die Uebergangsperiode geltenden Vorschriften.

The *first* section treats of the notion of the premium reserve as regards the various modes of insurance. The premium reserve is, as it were, to be looked upon as a credit in favor of the insured, although not in a strictly legal sense.

In the *second* section the method, customary in Germany, of putting the premium reserve into the annual balance, is discussed.

In the *third* follows an explanation of the provisions of the German private insurance law for the treatment of reinsurance. The law provides that the reinsured company must itself provide and administrate the premium reserve.

The *fourth* section treats of the separation and setting aside of the premium reserve in relation to the formation of the premium reserve fund. The demand for a complete material separation of the pieces of property serving as security for the premium reserve is a particular feature of the German private insurance law which, to my knowledge, does not exist in other states.

In the *fifth* section is discussed the method for entering the amounts of the premium reserve fund, for which the Imperial Bureau of Supervision over private insurance in Berlin has prescribed especial schedules.

In the *sixth* part mention is made of the provisions of the law regarding the rights of the insured to the premium reserve, in case of insolvency of the insurance company.

The *seventh* section concerns the regulation, especially laid down by law, for the foreign insurance companies operating in the German empire. For these companies the rules as to the premium reserve fund are binding only with regard to the insurances effected in Germany.

In conclusion, the *eighth* part considers the rules adopted for the period of transition.

Mr. Rufus W. Weeks (United States):—

Dr. Broecker has treated of the imperial law of Germany, and as I have made somewhat of a study of that law I will follow his discussion of it, not precisely as a translation but with some comments of my own.

The principal object of the law is to make sacred and secure the premium reserves, what we call in this country the policy reserves, and it first gives instruction as to how to formulate the bases of the premiums. But it does not specify any technical basis; it does not specify any formula, nor any table of mortality, nor any rate of interest, but allows each company to select its own and then submit them for approval to the Insurance Bureau, which has to say whether or not it accepts that formula and those bases. After that is decided and the premium reserves calculated by this formula are agreed to by the Insurance Bureau, they are carried as a liability in the yearly balance sheet.

On this balance sheet there is a special list of assets set opposite the premium reserves. It is called the premium reserve fund, and those are especially sacred assets, constituting of course the main part of the company's holdings. The law defines very precisely what those assets must be; government loans or loans of municipalities and states, real estate mortgages and possibly railroad bonds, but whatever they are, the list is very clearly given in the law and the company is required to report to the Insurance Bureau a special statement of its assets which compose the premium reserve fund. Under the law the premium reserve is a liability, and the premium reserve fund is the special part of the assets which covers that liability.

Those assets are especially sacred in Germany, or under German law, to the policy holders. They are held to be in bulk the property of the policy holders, inalienable. They cannot be levied on for debts of the company to anybody except the policy holders.

The practice in Germany in regard to reinsuring a part of the risk was the same as it is in this country and in England. That is, the reinsuring company would generally issue its policy for a certain proportion of the policy of the original company, and take a portion of the premium and hold its own reserve. But the new German law requires that all reinsurance shall be in the nature of term insurances for the net risk carried, so that there is no reserve to be held by the reinsuring company. The original company holds the entire reserve on its contract, and passes year by year to the reinsuring company the premium for the term insurance on the original policy, less the reserve.

In case of bankruptcy of a company, say a foreign company, for instance, the reserve would be there in Germany, and there could not be any bankruptcy as far as the German policy holders are concerned. It would be mathematically possible, and in my opinion it would be the right course for the Bureau, if that thing should happen, to take possession of these premium reserves and to instruct the German policy holders of the foreign company to pay their premiums hereafter to the Bureau, the Bureau to go on and administer the fund and pay death losses as they occurred, until the last claim was paid. Whether that is in accordance with the law has not yet been decided, although it is my own opinion that it would be in accordance with the law and I am sure it would be in accordance with right.

The German law has special provisions to enable the companies to bridge over the transition from the old state of things to the new.

The last remark in Dr. Broecker's *résumé* concerns foreign companies. Of course the object of the law as regards those companies is to secure that the premium-reserves of the German insured are invested according to German law and in safe hands in Germany. But the German law as regards the foreign companies is not limited to this; it is interested in all the attendant methods of management of a foreign company, because German policy holders are interested in these methods as they affect their future dividends and because these methods have their effect on the future solvency of the company as a whole.

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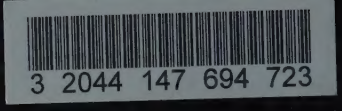
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